

and which all were satisfied at, that the back part of the smoke-box had been red-hot during the trip—thus confirming Mr. Keay's theory. The cause of this I will explain when I come to examine on Mr. Hall's Inventions and mechanical introduction of the atmospheric air. My further comments shall appear in my next.

I am, gentlemen, your obedient servant,

C. W. WILLIAMS.

ON THE RESISTANCE OF WATER TO BODIES MOVING THROUGH IT.

The general monthly meeting of the Liverpool Polytechnic Society took place on Tuesday evening, the 18th instant, at the Royal Institution.

JOHN GRANTHAM, Esq., (President), in the chair.

The CHAIRMAN, in a brief address, expressed the pleasure he felt, after the vacation, to resume the office he had the honour to fill; and, while he lamented the commercial depression that had existed, and still continued to a considerable extent, and which tended to throw a damp upon scientific pursuits, he congratulated the meeting on the improvement that had taken place, and which he trusted would call forth new exertions on the part of the members to further the objects of the society. During the recess, the committee had determined to award prizes, at the close of the present session, for communications, &c., of adequate merit, on several subjects; and, in doing so, it was thought advisable, in order to greater encouragement, to reserve communications from parties at a distance, as well as from those resident in the town. He then called on Mr. John Steel for his promised communication "On the Resistance of Water to Bodies Moving through it."

Mr. Steel said, it is impossible to obtain real ideas respecting the resistance of water to bodies moving through it, without possessing a clear understanding of the laws affecting the generation and destruction of motion; to promote which object I shall direct your attention to the *axis of inertia* of bodies, by which is understood the disposition that all matter has to remain in any state in which it may be placed, whether of motion or rest, in conformity to which principle it is held that there is an essential difference between the action of a body in motion and the resistance of a body at rest. In case of impact between them, they both resist; or, as Descartes expresses it, "a body in motion resists not while its motion continues, but while it loses motion—a body at rest resists not while it continues at rest, but while it is required motion." From this principle of inertia it is obvious in case a moving body meets with any obstacle in its motion. The obstacle (of whatever kind) will give a resistance proportionate to the force of the blow with which it is struck—that is to say, if the body in motion has a velocity of ten feet per second, and impinges on another body at rest, there will be a given resistance, which resistance will be doubled provided the velocity of the moving body is increased to twenty feet per second. In addition to inertia, there is likewise the cohärenz between the particles of bodies which may and does occasion resistance, both in solids and fluids. Thus, in the case of a log of wood lying loosely on the ground, and a projectile being sent against it, the resistance to the projectile will depend on the cohärenz and inertia combined, for, supposing the form of the blow does not separate the particles or fibers of the wood, the projectile will meet a resistance equal to the whole momentum of the log of wood, because, as one particle cannot move without the others, unless separation take place, and as, by the separation, the force of the blow is not able to effect the separation of the particles, the inertia of the entire mass will be the resistance to the moving body; or, suppose, again, that the log of wood be fixed in the ground, and a projectile be sent against it, although the blow would be quite strong enough to overcome the inertia of the wood, yet, as it is fixed in the ground, it will not, perhaps, move, and in such case the resistance will be composed of the inertia of the wood, the inertia of the soil in which it is fixed, and the cohärenz of wood to each other; and unless the latter resistance of itself were greater than what the form of the blow could overcome, it is obvious the motion of the projectile could not be entirely destroyed, as the wood would break. Having stated the law of resistance from inertia, the next inquiry is—In what manner do we to estimate the comparative resistances of bodies? and how are we to measure the force of various powers? It is clear that to measure any force we must do it by its effects, and the Newtonian mind; comparing the effects of different powers is to compare their contemporary effects—that is, their effects in any given time. [Mr. Steel here quoted from several authors, expressly pointing out the absolute necessity of time being time in all comparisons of power.]—By applying the principles laid down, the resistance of water to bodies moving through it becomes a matter easily understood, because, as the cohesion between the particles of water is almost, if not altogether, insuperable, the resistance of water will consist entirely of inertia, the laws of which are simple, but, from not attending to them, great difficulties have been supposed to exist in the calculations of the resistances of fluids, the general principle of which, as stated by writers on mechanics, is that the resistances of fluids to bodies moving through them vary as the square of the velocities, because, at double velocities, the particles of water give double resistance, and, further, in the same time the moving body has to meet and remove twice the number of particles; but it is to be observed that this statement of the law of fluid resistance always supposes that in the comparison of the resistance at different velocities the same time is occupied in the experiments, for the Newtonian theory is expressly based on that assumption, which is fully stated in Parkinson's *Hydrostatics*, to the effect that the resistance of fluids (like the resistance of solids) is to be measured by the quantity of motion acquired by the fluid, or by the quantity of motion lost by the moving body in a given time, and, as the latter is the more easily measured, the resistance of fluids is generally measured in that manner. It is important to observe, then, that the philosophical theory is that, to produce a double velocity in a moving body, there must be exerted a power of double intensity, which has to be applied twice as fast, which is the result of the quadruple theory of the book, but which theory practical engineers, philosophical fine, have strongly misunderstood to mean. That, to produce a double velocity, it is requisite to exert a power of quadruple intensity, having to be applied twice as fast, thereby necessitating an absolute expenditure of power in the same time as 8 to 1, when the velocities are at 2 to 1. To illustrate this point, Mr. Steel quoted from Mr. Booth's pamphlet *On the Theory and Practice of Propelling through Water*, and from Gordon, *On Elementary Inventions*, containing the statement made by Mr. Palmer, before the committee of the House of Commons in 1828, on the Manchester Railroad Bill, and also from the evidence of Mr. Rastelli, the engineer, as given before the same committee. This error of the engineer's has arisen from the manner of making experiments, in which weights have been the same power, for the engineer's theory has rested on the fact, that when the same arrangement of machine was used in the experiments at different velocities, there was always required a quadruple weight to impart a double velocity. Thus, in Colonel Bradley's experiments, made for the Society of Naval Architecture, it appeared that when he doubled the velocity of his boats moving through water, he had to quadruple his weight, and when the velocity of his boat was increased three times, he had to increase his weight nine times. Mr. Booth was the first to make experiments in which, at a different velocity of the boat, he altered his machine, and it was matter of surprise to find a great difference between the results of his experiments when thus made, and of experiments made in the ordinary method, and he justly attributed the difference to the predominance of the law of gravitation, as affecting bodies falling at different velocities; but he had not a just idea of the quadruple theory, and, consequently, did not arrive at a sound conclusion on the matter. Mr. Booth's experiments were made on a small boat, in a large trough of water. He affixed a string to the boat, which string passed over a pulley fixed on a nail of light wood, upon which were placed two stones—one. A first experiment was made by hanging a 5 lb. weight on a pulley of the same size so that when the string from the boat extended, the result was, the 5 lb. weight descended 7 ft. 6 in. in six seconds, dragging the boat the same distance in the same time. Everything remaining the same, he substituted an 8 lb. weight for the 5 lb., and when the result was the 8 lb. weight descended 7 ft. 6 in. in three seconds, dragging the boat the same distance in the same time. These two experiments were in conformity with the motion theory—we, a single weight or power exerted to be as fast when a double velocity was given to the boat. How is this to be explained?—First, never contradict each other. Here, then, is this to be connected with the theory before stated? It is a fact, that all bodies, if suspended, would fall at the same velocity; that, a feather and a gun, in a vacuum, fall at the same speed; but, in the atmosphere, the feather would fall slowly and the gun quickly, the difference being attributed to the resistance of the air. It is obvious, if the resistance of the air were the same ratio to the weight of the gun as it did to the weight of the feather, that they would fall at the same rate. From this it is evident that a difference of velocity in falling bodies can only take place when there is a difference of resistance between the resistance and weight. By applying this principle to Mr. Booth's experiments, the difficulty is cleared up. We find the 8 lb. weight gave a certain velocity to the boat, which, by the law of inertia, would maintain a corresponding resistance. Reducing the weight to half at a double speed, by increasing the weight to 4 lbs., it gave a double velocity to

the boat, thereby occasioning a double resistance in the water; but, before the boat could attain a double velocity, the weight would have to fall twice as fast as in the first experiment, which could not happen unless the relation between the weight and the resistance were doubled—that is to say, as the boat, at a double velocity, has to overcome a double resistance, it will require double power; and as the ratio between the weight and resistance has also to be doubled before the weight can fall twice as fast, there will be required double power for that size, making a quadruple weight (not power) requisite to produce a double velocity, and to overcome its consequent double resistance. Mr. Booth's third and sixth experiments were made by causing the string of the boat to pass over a pulley twice the size of that to which the weight was attached—consequently, the boat was dragged at twice the speed of that at which the weight fell. The result was, as between experiments 3 and 6, the same ratio of resistance maintained as between 1 and 2, but when No. 3 or 6 was compared with No. 2 there was a wonderful difference. In No. 2 it required 8 lbs. falling 7 ft. 6 in. in three seconds to drag the boat 7 ft. 6 in. in three seconds; and in No. 3 it only required 5 lbs. falling 7 ft. 6 in. in six seconds to drag the boat 15 feet in six seconds, the motion of the boat being at the same rate as in No. 2; but observe, the weight only fell at half the rate as in No. 2, and, consequently, the relation between weights and resistance were different, and taking into account that the friction of the shaft was also different, we have a full explanation of the whole matter; for, according to the theory now advanced, a quadruple weight falling the same distance, and dragging a boat at double leverage, will produce exactly the requisite conditions of the quadruple theory—that is, a double power moving at double speed; but in Mr. Booth's third experiment there was only 3 lbs., not 8 lbs. To what is the difference attributable? Some persons may doubt of the friction being sufficient to account for the difference as between 8 lbs. and 5 lbs., but it is easily shown to be so. The axis of Mr. Booth's shaft consisted of half-inch iron, working in a hole in a prop made of wood; and there does not appear to have been any means taken to obviate the enormous friction consequent upon such an arrangement; as, as Mr. Booth being applied to the subject, his answer does not mention that such means had been taken, and as the shaft was made of light wood, it is reasonable to suppose the prop was of the same material. It is to be observed, that friction is a thing but imperfectly known, but there is sufficient known to assure us that increase of weight upon an axis makes a difference in the friction, and also that an increase of speed makes a difference; and as in No. 2 the weight was 8 lbs., and in No. 3 only 5 lbs., and as in No. 2 the axis turned round twice as fast as in No. 3, it is evident there must have been much more friction in experiment No. 2 than in No. 3. I am aware engineers have a theory that friction is the same at all velocities, but it can easily be shown such is absurd. Mr. Steel here quoted from Mr. Booth's pamphlet, Gordon, and others, stating this principle, more especially as referable to railroads, upon which subject he then proceeded. It is surprising to find men of eminent ability, in the face of their own every-day experience, adopting such a theory; thus it appears admitted on all hands, that supposing the load to remain the same in a railroad train, it will require an engine of double power to drag it at a double speed, and as in the same time the engine will travel twice as far; it is obvious that there will be consumed a quadruple quantity of steam, because, as the area of the piston will be double, each stroke will consume a double quantity of steam, and to go double distance the engine will have to make twice the number of strokes. It is true, that if you merely estimate the consumption of steam, while travelling a given distance, that then the quantity of steam consumed will only be double; but that would be to set at nought one of the fundamental laws of Newtonian philosophy, which is, to estimate various powers and resistances by their contemporary effects—that is to say, by their effects in a given time, in which case railroad travelling has no advantage over water conveyance, in which the law is undisturbed. That the resistances at different velocities is as the square of the velocities." But it may be objected to me, if you maintain that it does not require an infinite expenditure of steam-power in a given time to propel about through water at a double speed; how do you reconcile your theory to practice? For instance, Mr. Stewart read, to the Society of Engineers, a table of the practical results of steam navigation, which approximated very closely to the octuple theory—in this I answer, that a mere table of results is not of much authority without the data from which it was calculated; for men of the greatest eminence occasionally make great errors in calculating the results of their own experiments; thus, in Mr. Wood's work on railroads, he gives the table of the power of locomotive engines, stating, that taking an engine of given power it will be able to draw different loads at different velocities—viz., at twenty miles an hour, twenty tons; fifteen, forty tons; ten, eighty tons; which is exactly the octuple theory, because, at twenty miles an hour, the engine will use twice the quantity of steam it uses at ten miles an hour, supposing it to be at work for an hour in both cases, and we may, therefore, take the table as showing that the same quantity of steam at double speed will only drag one-eighth the weight that it can drag at single speed. The most surprising part of this table is, that it contradicts the experiments made by Mr. Wood himself, and is in opposition to every other authority; for instance, Mr. Hartwick's table in the *British Encyclopedia*, article "Railroads." On examining the report of the evidence before the Committee of the House of Commons of 1828, I find that both the promoters and opponents of the Liverpool and Manchester Railroad Bill were quite satisfied that on a railroad, if you applied a given power to a given load, you always produced the same effect, no matter at what velocity you dragged the load; whereas on canal, if you doubled the velocity you had to increase the power eight times; and to prove this position Mr. Palmer calculated a table, which was handed into the committee, stating the comparative effect in dragging a load as between a canal and railway. By the table it appears the canal effect was much greater than the railroad effect at all velocities less than 45 miles per hour, but at higher velocities the railroad effect was infinitely greater than the canal effect. Thus the effect of 1 lb. at four miles per hour per canal was 200, per railway 100; 1 lb. at two miles per hour per canal was 1000, per railway 100. In conclusion, Mr. Steel stated that the great difference between steam-vessels and locomotive carriages was, that the fulcrum of the steamer was movable, but the fulcrum of the locomotive was fixed; there was also a difference in the increase of resistance at high speed from the wave the steamer created at her bow, and also from the water not closing in again, her stern as she passed through it, which two kinds of resistance were demonstrated by Colonel Beaufort as plus and minus pressures, on the subject of waves. Mr. Steel read some extracts from the report made by Mr. J. B. Russell in the British Association in 1834 and 1835, but as they had no immediate reference to the law of inertia, we do not deem it necessary to quote them.—Mr. Steel was heard with much attention, and was cheered at the close of his address.

The Chairman invited any remarks which gentlemen present might think fit to make, and a short discussion ensued, in which Mr. Booth, Mr. Lloyd, Mr. Steel, the chairman, and a few others took part. Mr. Booth supported the accuracy of his experiments, and Mr. Lloyd also questioned some of the positions of Mr. Steel, who explained, and urged with equal confidence the data on which he had proceeded, and the difficulties he had drawn from them. The electrician remitted (and this appeared to be admitted by them all) that in the power required to propel a vessel through the water, much depended upon the form or model of the vessel's bottom.—A vote of thanks was passed to Mr. Steel for his communication.—*Liverpool Standard*.

Iron Vessel.—There are now in the iron shipbuilding yard of Mr. John Laird, of North Birkenhead, two vessels of rather singular construction. The first vessel is intended for a floating-light for the entrance of the Mersey. It is much longer than the present light-ships, and is expected to have less motion, even in a rough sea, than the short-woad vessel now in use. It will be ready for sea in about two months. The second vessel is building for the Honourable the East India Company. It is intended for a pilot-boat in the Hindostan. Unlike our pilot-boats, which are small, it is of 200 tons burthen, and of more than ordinary breadth of beam. Its interior is to be completely finished in Liverpool. In the hold will be large tanks for holding water, with which, it appears, the pilot-boats on the Calcutta station always go to sea, that, in the event of falling in with ships short of water, they may supply them with an indispensable article. The cabin will be a spacious apartment, lofty and well ventilated, with berths all round for the pilots. We need scarcely add, after the heading of this paragraph, that except the decks and the cabin, these vessels are wholly built of iron.

A scientific expedition, under the direction of the Academy of Sciences of St. Petersburg, is about to proceed immediately to Siberia, to explore the vast country between the rivers Pjatina and Chetanga, extending to the Icy Sea.

RECOVERED OF TWO TWENTY BARRELS.—The enigma under this heading has been very successfully disposed of the various properties which came into their possession. They have not sold by private sale, nor gained the greater portion of those which remained until at the public sale. The property of Sandhill factory has been sold to Mr. Dickson, of the firm of Thorp and Dickson, for £2000. The two dwelling-houses, and other property on the south side of Bridge-street, to Mr. Wilson, ironmonger, for £1000. Twine House, to Mr. Massey, of London, of a price, considering Mr. Wilson's full interest in the property, apportioned to £1000. Linen-drill property in Hastings, to Mr. George Robinson, draper, the £100. We are glad to remark that the above properties have been sold at fair prices. The only property now owned are the houses in Birkdale, and 100 shares of the Shipping Company. Whitmore Hall is again to be offered for sale in November.—*Mersey Standard*.

FRENCH INVENTIONS—FORMATION OF COMPANIES.

The French are certainly the most inventive people on earth, but it seldom happens that they bring their schemes to successful maturity. Amongst the extraordinary things recently announced was a substitute for gas, called liquid hydrogen, which was in cost only half as dear for an equal portion of light. A company was formed before the merits of the discovery could be tested, and now the shareholders find that the cost of their liquid is twice that of coal gas. The company, therefore, is all but dissolved.—Another association, however, has been formed for the same object, and it is announced that the liquid, in this case, will be two-thirds cheaper than gas. This will probably end also in smoke, although it is probable that we shall see very little in the way of light. Two years ago a man announced that he had discovered the means of fixing the electric light, of any size, within the circumference of three feet, and gravity proposed to light Paris at night by about half a dozen artificial suns. Wild as the scheme was, he found a few moneyed persons to back him in some expensive experiments, and it is still pretended that he will succeed; so that Paris, with half a dozen large electrical machines, will no longer stand in need of candles, oil lamps, or gas.—This is almost as grand an affair as that of the Venetian, some years ago, who pretended that he had discovered the means of absorbing the sun's rays during the day, and bottling them up for use at night.—There is another wild scheme on the topic, for which attempts are making to get up a company. Charcoal having become excessively dear, it is proposed to collect all the vegetable refuse of the capital, and to carbonize the liquor portion, so as to produce charcoal. The projectors calculate that this refuse is more than sufficient for the supply of the whole of the charcoal required for the capital, and the cost of which amounts to no less than £20,000,000. annually. That charcoal can be produced from refuse, such as potato-peel, cabbage-stalks, &c., there is no doubt; for Mr. Raspail, the eminent chemist, who has been employed by the projectors, has obtained some very good specimens; but the wiseacres have, in their estimates, overlooked one important fact. They propose to obtain their materials from the chaffiniers, who twice a day go through the streets of Paris, raking in all the heaps of refuse in the streets for rags, old paper, and bones. They are to put into their baskets the refuse required by the company. This they can do, but it would require ten loads to each chaffinier for every one that he has now to carry; and the expense of carriage would amount to much more than the worth of the article. The artificial charcoal will, therefore, also end in smoke.

REGULATIONS OF RAILWAYS.

In the Act which was passed during the last session of Parliament, are two important provisions (the 15th and 17th), giving compulsory powers of taking lands where the Board of Trade should consider the same necessary for the safety of the public, and for increasing the power over servants of the companies in case of misconduct. By the 15th section, it is declared—"And whereas by various Acts relating to railways, compulsory powers are given to railway companies of purchasing and taking lands for the construction of such railways, and it is provided that such compulsory powers shall not be exercised after the expiration of certain limited periods from the passing of such Acts; and whereas it is sometimes found necessary for the public safety that additional land should be taken after the expiration of such periods, for the purpose of giving increased width to the embankments and inclinations to the slopes of railways, or for making approaches to bridges or archways, or for doing such works for the repair or prevention of accidents as are hereinafter described; be it therefore enacted, that in every case in which the lords of the said committee (Board of Trade) shall certify that the public safety requires additional land to be taken by any railway company, for such purposes as aforesaid, the compulsory powers of purchasing and taking land in the Act or Acts of such railway company, together with all the clauses and provisions relative thereto, shall, as regards such portion or portions of land as are mentioned in the certificate of the lords of the said committee, revive and be in full force for any such further period as shall be mentioned in such certificate. Provided always that any railway company applying to the lords of the said committee shall give fourteen days' notice in writing, in the manner prescribed by the Act or Acts of such company, for serving notices on landowners of their intention to make such application to all the parties interested in such lands, or such of them as shall be known to the company, and shall state in such notice the particulars of the lands required; and if any of such parties interested shall apply within the said period of fourteen days to the lords of the said committee, such party shall be heard by them before any such certificate is given. Provided also that where any such application shall have been made by any railway company to the lords of the said committee, upon which application any such certificate shall have been refused, the directors of such railway company shall, if required by the lords of the said committee, repay to the party resisting such application any expenses which he or they may have incurred in resisting such application." The other provision is very comprehensive, and under which any engine-driver, or any other person, may be seized who shall be found drunk on the railway, "or who shall wilfully, maliciously, or negligently do, or omit to do, any act whereby the life or limb of any person passing along, or being upon such railway, or the works thereof respectively, shall or might be injured or endangered; or whereby the passage of any engines, carriages, or trains shall be or might be obstructed or impeded." The penalty for all such conduct is two months' imprisonment, or any fine not exceeding £10.

PREVENTION OF ACCIDENTS ON RAILWAYS.—A paper by M. Hous, of Brest, on the means of preventing accidents on railways by the breaking of an axle-tree, was read at the Academy of Sciences, on the 12th instant, and which was accompanied by a model, showing, with great simplicity, but conclusively, the value of the invention, which consists in such a modification of the wheels of the locomotive, that if the axle should break the wheel itself becomes an axle, and prevents any further accident. M. Hous has also invented a break, which, in the event of accident to a locomotive, would act simultaneously upon the wheels of all the carriages of the train. Already, since the melancholy catastrophe on the Versailles Railway, at least twenty inventions of breaks, having the same object as that of M. Hous, have been communicated to the Academy, or been otherwise announced; but up to the present moment it does not appear that either has obtained the unqualified approbation of the practical men of science, whose opinion on such a subject is entitled to weight.

ELECTRO-MAGNETIC LOCOMOTIVE.—Under the patronage of the directors of the Edinburgh and Glasgow Railway Company, Mr. Davidson, philosophical instrument maker, has been employed in a series of extensive experiments as to the practicability of applying electro-magnetism for propelling trains along the line of a railway. The experiments having succeeded so far, a machine containing six powerful batteries, huge magnetic coils, and three large magnets fastened on each of two revolving cylinders, through which pass the axles of the driving-wheels, has been constructed; and, on Saturday last, its motive capabilities were tested in one of the carriage-sheds belonging to the railway company, in presence of several of the directors. The ponderous machine, weighing between five and six tons, was instantly set in motion on the immersion of the metallic plate into the trough containing a solution of sulphuric acid. One curious phenomenon connected with the motion of this new and ingenious instrument, was the extent and brilliancy of the repeated electric sparks which accompanied the action of the machinery. The motion produced, although not rapid, was such as clearly to establish the principle that this agent is adapted to the purpose of locomotion; and it is only justice to the inventor to add, that he expressed himselfanguish as to his being able to obviate many of the difficulties which yet stand in the way of its being adopted in lieu of the steam-locomotives now in use. All present expressed themselves satisfied with the results of this, the first experiment upon the subject on a large scale.—*Edinburgh Standard*.

JAPAN'S COUNTRY—EXPLORATION AT WOODWICH.—A great number of military and other gentlemen assembled in the marshes, a few days since, to witness experiments with concussion shells invented by Captain Norton, and a massive block of wood, about five feet long, and two feet six inches broad, divided into two pieces about fifteen inches square, joined together by cement, the invention of Mr. Jeffery. There were numerous shells fired on Captain Norton's principle; nine of them, being of eight inches in diameter, were fired from a 68-pounder gun at 100 yards' range, and were constructed with leaden fuses. Five of these shells answered remarkably well, but four did not burst. The other ten shells (32-pounds) were constructed with wooden fuses, and nine out of that number burst on striking the bulk-head; the other did not burst. The block of wood submitted by Mr. Jeffery was burst to the centre, exactly to the middle of the jointing, and a 3½-inch shell inserted, for the purpose of testing it to pieces. On a portion being ignited, the shell soon exploded, tearing the solid wood in all directions and into numerous fragments, but in no part separating the pieces where the joining with the cement was made. It has been made evident by the experiments which have been taken, that the concussive force of Captain Norton's shells have been successful, and the experiments by Mr. Jeffery have fully established the value of his invention, as it possesses the important advantage of being loadable in water. Mr. Jeffery had one of the fragments showing the joining preserved, to submit it to the Lord Commissioners of the Admiralty, by whom desire the experienced trial place.

SOUTH, THE TROPICAL.—South, the tropical, was printed and page 100. South, the tropical, was with white gold, page 101, and page 102. South, the tropical, was with gold, page 103, and page 104. South, the tropical, was with gold, page 105, and page 106. South, the tropical, was with gold, page 107, and page 108. South, the tropical, was with gold, page 109, and page 110. South, the tropical, was with gold, page 111, and page 112. South, the tropical, was with gold, page 113, and page 114. South, the tropical, was with gold, page 115, and page 116. South, the tropical, was with gold, page 117, and page 118. South, the tropical, was with gold, page 119, and page 120. South, the tropical, was with gold, page 121, and page 122. South, the tropical, was with gold, page 123, and page 124. South, the tropical, was with gold, page 125, and page 126. South, the tropical, was with gold, page 127, and page 128. South, the tropical, was with gold, page 1

TALACRE MINING COMPANY—THE ENSUING MAYORALTY.

A court of aldermen was held, on Thursday last, at which the following extraordinary proceedings took place, some observations on which will be found in another column.—Alderman THOMAS WOOD rose to call the attention of the court to the situation in which he had been placed with reference to private aspersions, the substance of which had reached him in a circuitous way, in order to meet any charge against him. He was not aware of any specific charges. All was rumour; and, therefore, as he was not able to meet any accusations specifically, because nothing made itself tangible, he proposed to put into the hands of each of the aldermen a copy of Lord Deasman's judgment, on an investigation of the whole facts, with an extract from the affidavit, explanatory of one part to which allusion had been made. He had thought of publishing the whole of the affidavits on both sides, but their length was so great [here the alderman held up an immense pile of papers as the affidavit] that he believed, and was advised, that it would be quite hopeless to tax the court with so voluminous a document. He would, however, deposit the papers in court, and there, or in private, answer any questions, or meet any charge which could be made, aware that he had been exonerated, in all directions, and, he must say, most grossly persecuted. The alderman then delivered the following—

Queen's Bench, Westminster-Hall, May 20.

IN PARTS CHAPFELLOW IN RE WOOD—JUDGMENT.

LORD DENMAN—An application was heard, last term to compel Mr. Wood, an attorney, to deliver up papers to three persons prosecuting the rule, and also to answer the matters of the affidavit, which are said to charge fraud and malversation in his professional conduct. That part of the rule which requires the delivery of papers was not pressed; in the argument it was sought to be modified, so as to enable parties to make a defence in some proceedings against them, but we find no sufficient grounds for making this part of the rule absolute to any extent or in any form. The complaint originates in a concern called the Talacre Mining Company, which came into existence about the beginning of 1853, and found itself greatly embarrassed, if not insolvent, in less than two years. Its misfortunes are attributed on the one side to the non-payment of debts by the shareholders, on the other to extreme improvidence in many, and to frauds and deceptions alleged against others, especially against Mr. Wood, who united in his own person many offices, and enjoyed great power, which he is charged with abusing, to the loss of the prosecutors, and for the sake of gain to himself. He was one of the original projectors of the undertaking, one of three trustees to whom the property was conveyed, a director as soon as the company was formed; he was also nominated as the permanent chairman of the company, which derived much of its influence from his name and character as an alderman and one of the sheriffs of London; he was at the same time, with his partner, and in that partner's name, the solicitor to the company. In this last character alone he is brought before the court. The charges against him appear in a letter from Mr. Ashurst, the attorney for the prosecutors of the rule, who are three of the shareholders of this company. He is there said to have committed frauds in the purchase and sale of the mining properties, in violating other directors, especially Mr. Chappelow, to sign notes for the purchase-money, while he himself declined to do so, on pretence of his being in a partnership; in passing off as the produce of the Talacre Mine, which turned out of very inferior quality, better coal, which came from the Bryn Mine, and in vacating the excellence of that produced from their pits, and publicly asserting that it was both valuable and popular, when he knew that all the cargoes had been rejected as worthless and unsaleable. In the argument of the bar, the first charge took a more detailed form, as if Mr. Wood had, in conjunction with others, secretly purchased the properties very low, and afterwards, as the legal adviser of the company, had induced them to purchase from him, and his co-purchasers at an extravagant price. It was not denied that on this transfer the vendors to the company made what they can on the face of it to be an advantageous bargain for themselves; but recollect, that to Mr. Wood it was less so than would appear to be on the affidavit, as he constantly refused, as he declares, to take the shares which form part of the price of those coal-fields, though pressed to do so repeatedly; and, although, certainly, in some of the co-vendors kept them for their own use, this part of the case is left in some obscurity; but Mr. Wood denies all fraud in making this bargain, and shows that it was conducted throughout with the knowledge and approbation of the directors and the company. Mr. Chappelow, in particular, the most prominent among the prosecutors, was himself in office in more than one capacity—treasurer, auditor of the accounts, bearing all the statements, having access to all the books and papers, voluntarily becoming a director at a late period, inviting his friends (likewise to join the company, and take a part in its affairs. The affidavit runs into great length in support of the rule. Mr. Wood's, the only one in opposition to it, is much longer. Some of the imputations it distinctly denies; some it explains, and on other points it reiterates on his accusers.

If the court were satisfied that fraud had been practised by Mr. Wood on the company, or on the individual proprietors, or on the public, we should still have to inquire whether this was done in the character of attorney before we could exercise a criminal jurisdiction in this summary method, and we may say in general that the opportunity of information possessed by all these individuals, and the actual acquaintance and concurrence with all that was in progress on the part of Mr. Chappelow, preclude them from the right of complaining against Mr. Wood, in respect to his action for the company. Whether Mr. Wood's journeys to Dublin and other places, to promote the interests of the company, and the statements made by him, can properly find place in an attorney's bill, or whether the explanation of those statements contained in his affidavit be satisfactory, we are not inquiring. In this long history there is no concealment or deception practised by the attorney on his clients; the rule must, therefore, be discharged. We should be bound to discharge it with costs but for one fact—it is known that in February, 1854, a meeting was held at Mr. Wood's office, when it appeared that Levenson had sued Mr. Wood and others on their covenant with him for a large part of £10,000. Wood introduced the subject, and led Chappelow and Taylor, as they swear, to believe that this debt was due from the company, and urged them to sign notes for the payment of the reduced sum of £3,000, agreed to be accepted by Levenson, the form of note was settled by Mr. Wood. Chappelow himself made himself liable to £3,000, and Mr. Wood, when some were handed him to sign, objected that he could not, by reason of his partnership. It was stated that Chappelow had been sued on such notes, Wood acting as his attorney, and is now, in prison by virtue of a judgment. On this matter Mr. Wood denies that he introduced the subject, or gave the form of note, or acted as attorney for the company, a Mr. Slaughter having previously been reported to in that capacity. He says, also, that he took no other part than as chairman, seeing the proceedings faithfully recorded; but he does not deny that when Levenson was suing him personally for a legal debt, he presided at a meeting, when it was resolved that that debt should be satisfied by the notes of Chappelow and others, who do not appear to have owed any legal debt to Levenson, and certainly were not sued for any, nor that he himself refused to sign such notes when handed to him. It is not easy to understand how he could divest himself of the character of solicitor for the company for that special occasion. Mr. Slaughter was, indeed, called in, but not adversely to Mr. Wood, and he makes no affidavit. At the public meeting held immediately before, he had been resolved that the company was considerably overcharged for the works purchased, and that Levenson's claims were open to investigation. This whole matter appears to be an apprehension, and, we must add, an incorrect, that Mr. Wood has no right to complain of his rule being enforced for the men who have suffered by following his advice at a time when he was selector to the company, and they were called upon to pay shareholders of the same company. We, therefore, think that the rule must be discharged without costs.

EXTRACT FROM MR. WOOD'S AFFIDAVIT AS TO THE SETTLEMENT ALLIED TO IN THE JUDGMENT.

Sir, that a statement of the proceedings of the extraordinary general meeting was printed and circulated according to a resolution of the said meeting, and the said paper intituled No. 3 or one of the papers so printed and circulated.

Sir, that previous to the said meeting in February, 1854, this defendant was then sued with others in respect of his covenant for the payment of the said sum of £10,000, accrued to be paid in to the said Lewis Levenson by the 1st day of November, 1853; and that such fact was made known to the general meeting before the said resolutions of any of them had been agreed to, and defendant made that immediately after the said said meeting at the office of the George and Victoria, the said William Chappelow, not wishing to return to the office of the company, whose conduct he was impeaching, nor to incur the expense of meetings at the George and Victoria, agreed to hold a meeting at this defendant's office in Coffer court, Grangebrook street, when the subject of this demand was introduced, not by this defendant only, but by other parties, who were then also sued, as well as by Mr. Slaughter, who having been instructed by the said William Chappelow and others to interfere and procure a settlement with Mr. Levenson, had already undertaken the matter, and had had several interviews with the said Mr. Levenson and his wife.

Sir, that the said Mr. Slaughter having agreed upon terms of settlement, advanced the sum owing on behalf of this defendant's office, and reported the terms of the agreement, and stated that he had received on Mr. Levenson to call home, and take only £3,000, instead of his original demand of £10,000, he being paid no interest and costs, and that Mr. Levenson was with his wife but in the neighbourhood, in consequence of the arrangement, and when the whole matter was finally settled, the said George Taylor himself gave the attorney the money to purchase the shares upon which the said note was drawn, the full payment of which amount were entered in a minute book of the said company, so taken away by the said William Chappelow, and which, in like depositary interest, is now in his possession, or under his control.

Sir, that the said Mr. Slaughter acted in the manner for the said purpose for the appointment of the said William Chappelow and others as directors, and on the basis of the defendant's representations and belief, the said Mr. Slaughter then advised the said directors, that, in his opinion, Mr. Levenson's covenant could not be compromised of, and stated that he thought Mr. Levenson was entitled to all he claimed, or would be entitled to.

Sir, that he had nothing whatever to do with the settlement than to see the terms proposed and agreed to definitely entered on the minutes.

Sir, that the said William Chappelow and the other directors entered upon the investigation of the claims of the said Mr. Levenson, in pursuance of the said rule as appears to and adopted at the present meeting of the rule of February, 1854, as aforesaid, and that the said Mr. Slaughter made the said settlement of his claim, so far as between, in accordance to the instructions given by the said representations at the said meeting, his said claim being in respect of the office of the said company, and having been put in court against several of the directors and shareholders.

Sir, he desirous to act on the authority of the said company, but simply as chair man and director, the settlement of this affair being entrusted to the said Mr. Slaughter.

Sir, that the rules were settled or approved of by him, but he says they were the terms suggested as part of the settlement, in which the defendant did not interfere, except to see the facts and circumstances connected, and that he (the defendant) signing such bills, not because he was compelled by his articles of partnership, but because it was in partnership, which he considered a sufficient reason to induce him to decline signing bills.

Alderman WILSON requested to be informed whether the Talacre Mining Company, of which Alderman Thomas Wood was chairman and secretary, was in debt?—Alderman T. WOOD.—By no means.

Ald. WILSON said it had been stated to him not only that the Talacre Coal Mining Company was in debt, but that Mr. Chappelow, who was the only man of property connected with the direction of the concern, had become a bankrupt in consequence of the cessation, and that the liabilities fell upon Ald. Thomas Wood.—Ald. T. WOOD said it was erroneous to say there was one man of property amongst the directors, or that the liabilities were of a serious nature. Arrangements of a satisfactory kind had been made with respect to the transactions in the company, and he courted inquiry, and was ready to answer any specific charge.

Ald. COPPLELAND said he should exercise the utmost candor on the subject. It struck him forcibly that any gentleman who expected to fill the chair of the city of London should be free from the apprehension of being made amenable to the bankrupt laws. If a magistrate were amenable to these laws a grave question would arise as to whether the allowance to the Lord Mayor did not become as a vested right.

Ald. WILSON stated, that in the event of a bankruptcy, to which, as a partner in a coal mine, the candidate for the mayoralty might become liable, any creditor might attack the Lord Mayor's allowance in the Lord Mayor's Court.

Ald. T. WOOD repeated that his liabilities were of no importance, and that all the accusations amounted to nothing more than hearsay.

Ald. COPPLELAND observed that, in the event of the exercise of any power possessed by creditors, if a Lord Mayor became bankrupt, the corporation might find themselves plunged into inextricable litigation. The court should, he thought, be well informed upon that point before the day of the election of the chief magistrate.

Ald. WILSON said the information he had received was contained in the paper called the *Mining Journal*, which contained such charges against Ald. T. Wood, as, if they were without foundation, called for the severest punishment. In addition to that information, he had seen a report, drawn up by a member of the corporation, of whose veracity he had never heard any question, and describing conduct which certainly could not be called honest. That report stated that Ald. T. Wood had produced coal as the produce of the Talacre Mine, which coal had been conveyed from a mine of a very different quality. Now, the court of aldermen must require explanations of such charges. A pamphlet, too, had appeared, containing more broad assertions than those contained in the *Mining Journal*, so that a man with an atom of spirit would at once have resented such accusations if they were founded in error or malignity. It was stated that the only solvent man amongst the directors had been ruined.—Ald. T. WOOD.—It is wrong to say there was but one solvent man amongst the directors.—Ald. WILSON declared that it was positively asserted that the person he alluded to, having become a bankrupt, got rid of the 30,000/- liabilities, which thereafter devolved upon Ald. Thomas Wood. Now, if Ald. Thomas Wood had traded in coal, he certainly became liable in the bankrupt laws; but if he did not become liable, it was not on account of his honour to shelter himself under his profession. It was the duty of every person who sought such an office as that of chief magistrate to clear away any imputation against him. The paper put into his hand, at the judgment of Lord Deasman, conveyed in his (Alderman Wilson's) opinion, a heavy censure, instead of exonerating.—Ald. T. WOOD said the whole of the charges, from beginning to end, had been most satisfactorily refuted by the affidavit put into court, with the exception of one part, which he was prepared to account for to the full satisfaction of those who would undertake an investigation.

Ald. FARREBROTHER stated that, as soon as he saw the *Mining Journal*, he asked Ald. T. WOOD whether he did not intend to proceed against that paper by information, and declared that he (Ald. Farrebrother) would do so if it were his case.—Ald. T. WOOD said he certainly had prepared legal documents for the purpose of proceeding. He, however, upon consulting his friends as to the propriety and expediency of adopting such a course, and he was strongly recommended by them not to take legal proceedings, but to meet any charges which might be brought against him honourably before the court. He then bound to set upon such advice.

Ald. BROWN said, it was most desirable that, as a body, the court should act in unity. There was, however, a matter of more importance by which they must be guided. It was indispensably necessary that a gentleman who aspired to fill the high office of Lord Mayor should clear himself of everything stated to his prejudice. He did not mean the trivial title-tattle which abounded against public men—he meant, that when grave charges were made from the judgment-seat, he could not think of compromising his sense of duty by selecting the man who did not prove himself, under such circumstances, as the more proper of the two returned to the court as eligible candidates. He (Mr. Ald. Brown) would ask whether it would not be better for Ald. T. WOOD to retire for the present year, in order to afford a proper opportunity of investigating the whole affair.

Sir PETER LATRUE suggested the course of submitting the case for inquiry to a committee.

Ald. WILSON declared that he had advised Ald. T. WOOD to have the case referred to a committee in June last, but the proposition was declined. He had done his duty as a member of the court; he could not think of voting for a man as chief magistrate with such a judgment as that of Lord Denman over him. The office must be maintained in honour, and splendour, and hospitality. The allowance from the funds of the corporation was not sufficient to support it with becoming dignity, and a Lord Mayor ought to have property to enable him to supply the deficiency. Now, Ald. T. WOOD said, when he was candidate for the office of city solicitor, a few years ago, that all the property he had derived from his profession, and that he was not worth a thousand pounds in the world beyond the produce of his business.

Ald. T. WOOD said, he did not recollect that anything of the kind had passed.

Whatever might be the opinion entertained by Ald. Wilson as to the indispensable ingredient of wealth in the composition of a Lord Mayor, he (Ald. T. WOOD) had been elected alderman of his Ward after having been repeatedly applied to on the subject; and he believed he had given satisfaction as a magistrate. He had received the thanks of his fellow-citizens, too, for his conduct in the shrievalty. As for all that had been said about bankruptcy, the suspicion of such an event existed but in the imagination of those who alluded to it. He must declare that a more persecuted man, or one who less deserved persecution, did not exist. He had been advised not to proceed against the paper which maligned him, and he was sure the advice was sound.

Sir PETER LATRUE then moved that the court should go into committee on Saturday, or Monday, on the subject.—Ald. T. WOOD opposed the motion, and said he should submit all the papers to the committee. He was determined to have inquiry, and had never refused to give all the information in his power, and never would refuse to answer any questions.—The motion was then put and negatived, four hands having been held up for it, and five against it.—The matter remains for future discussion.

TALACRE COAL AND IRON COMPANY.

COURT OF BANKRUPTCY—REPT. 23.

IN RE WILLIAM CHAPFELLOW.—This case, which was adjourned by Mr. Commissioner Fase two months since, was again brought forward to-day. It excited a great deal of interest, and the court was very full. It having been expected that some documents would have been made relative to Mr. Alderman Thomas Wood's connection with the bankrupt (who had ruined himself by following the advice of the worthy Alderman, acting as solicitor of the company), through the Talacre Coal and Iron Company, which cost much suspicion as to the honesty and faithfulness of the worthy alderman's conduct, while acting in the official capacity of director, chairman, solicitor, trustee, vendor, and purchaser of the property of the company.

Mr. JAMES, on behalf of the assignee, objected to the balance-sheet, it only giving a cash account since the dissolution of partnership between Chappelow and his son, which took place in the present year, about five months since.—Mr. ASHURST, for the bankrupt, said that all had been realized that Mr. Commissioner Fase had ordered, which he thought quite sufficient.

Mr. JAMES denied that Mr. Fase had only realized the amounts since the dissolution. He had stated that the bankrupt's amounts were only to show his own affairs, and not to混同 with those of the Talacre Coal and Iron Company. The long narrative handed to Mr. Fase had nothing to do with the bankrupt's affairs. Mr. Chappelow had, when in partnership with his son, stated, as stated; the assignee only wanted to know what had become of that money. Mr. Howard, for whom he appeared, had nothing to do with the Talacre Coal and Iron Company.—Mr. ASHURST said Mr. Howard had to do with the company, for he discounted the bills only to enable Chappelow to be proceeded against. Baker, on account of his partnership, not being able to do it himself. The fact was very plain, for, not having sufficient money, Mr. Howard paid Baker part of the sum, by making over an estate to him, which was mortgaged to the extent of £1000, for undertaking to pay off the mortgage.—Mr. Commissioner MERRIFIELD said, in consequence of Mr. Fase's knowledge of the affairs of the bankrupt, and how the bankrupt stood with the company, he should adjourn the meeting until Mr. Fase returned, proper accounts to be provided in the meanwhile.—Mr. ASHURST had no objection to that proceeding, but he should abide by the present accounts, and, if any cause should arise to make any addition, such addition should be supplied to the court within the time named in the practice of the court.—Mr. HORNIGOLD applied to prove a debt on account of a bill signed by Chappelow; Ald. T. WOOD, and Davis, which was denied, on some objections being made by Mr. ASHURST to the proof, to stand over until Mr. Fase's return.—Mr. ASHURST remitted Mr. Hornigold to the Bankruptcy Court to prove, if he liked it better, Mr. Davis could be met with, and that garnishee was equally solvent with the other.—This advice caused some commotion, and rather disconcerted Mr. Hornigold.—The next meeting was then fixed for the 21st present.

STATE FORMATIONS IN ITALY.

The following observations are extracted by statements contained in an article entitled "Scriptural Geology," published in one of the Quarterly Reviews, and on which we intend founding a series of papers, to appear in consecutive Numbers of the Journal:—"I have found at Waymouth masses of agglutinated sea-weed, in the different stages of compactness, so exactly resembling slate in their appearance, more particularly the more perfect specimens, that the conjecture seems almost inevitable that these woods are the material of slate formations. The one specimen is sufficiently soft, so as by delamination to allow its plates to be separated into layers of compressed sea-wood; the other specimen (so closely compacted as to be almost inseparable, and in appearance very like paper-mache) resembles so much the first, and has become so exactly like common slate in its appearance and fracture, that there is little doubt but that it is the intermediate stage of induration of the wood between the former specimen and slate itself. Having my attention alive to appearances in the structure of slates, and in Westmoreland I noticed large slabs of slate, of the kind used for tiling, though of the coarsest description, in which I perceived a sort of bulging inequalities, having a branching structure which, to my unscientific eye, had all the appearance of compressed stalks. In one of these slates there was a round stone, and the grain of the slate suited itself to it just like the curved deviations in the fibres of the grain occasioned by the knots in deal boards, or like the edges of the leaves of a book close pressed, in which a round pencil has been placed. The waving direction of the laminae of the slate, which was large, was influenced from one end to the other by this obstruction to their regularity. This fact, which cannot be unnoticed, seemed to prove that the laminae of slate could not be of any kind of granular or clay-like formation. But probably a close microscopic inspection will prove what the structure actually is, if observations similar to the above are not deemed conclusive. The singular variety of fracture which belongs to the different kinds of slate may appear opposed to the idea that they are of the origin here indicated; yet, if inquiry should detect that this property is attributable more probably to the different direction of the pressure in which they have been subject, rather than to any chemical cause (though such may, however, be yet present), this difficulty would not oppose the conjecture as to the origin of slate, which such facts would seem to lead to."

LONDON ELECTRICAL SOCIETY.

The meeting met on Tuesday evening, the 20th inst., at No. 8, Cavendish-square.—The papers read were:—1. "Observations by Mr. Walker Relative to the History of the Adam Crater." He has observed that these extraordinary creatures propagate their species by the usual process of generation. He has seen, too, race after race become extinct, the survivors feeding on the bodies of the dead, leaving eggs and other exuviae. In opening the apparatus, with the view of obtaining specimens before the whole family became extinct, he was disappointed—only one insect, and that was but, was seen. He anticipates that the fluorescent deposits around the platinum coils may prove to be an inferior oxide of silicon, and may lead to determine the exact question of the atomic weight of this element.—2. "Observations by Mr. Snow Harris upon Mr. Walker's paper on Lightning Conductors." Our readers are aware that Mr. Walker has recommended visual metallic masses to be connected with the lightning conductors, in order to prevent the possibility of a spark passing between them. Mr. Harris denies the necessity of this, and conceives it to be useless. He says that the spark may pass from an inefficient conductor to uninhabited metals, but not to semi-insulated. He examines the experiments given by Mr. Walker in illustration of his views, and marks the points in which he differs. He allows the distinction, but not the difference, between a Leyden discharge and a spark of lightning, and, differing from Mr. Walker, he prefers the Leyden to the prime conductor experiments. The difference between the two discharges he considers to be more a matter of intensity, than due, as Mr. Walker believes, to the direction of the discharge, and gives instances of accidents in Nature. We cannot attempt to enter into Mr. Harris's arguments without the aid of diagrams; we should neither do justice to him nor to Mr. Walker. The matter is one of great moment, and needs silent investigation. The practical result in which these two gentlemen are at variance is, that the one recommends, under certain circumstances, the use of visual bodies with the conducting-rod, and the other objects to such union as useless. The one prefers the spark from a prime conductor to his illustration of lightning—the other a Leyden spark. The paper is ordered to be printed immediately, and within a week will be in the hands of the public, at the same time with Mr. Walker's communication.—Mr. Walker's "Electro-Meteorological Register" was then laid before the society.

COAL TRADE.

SHROPSHIRE.—The colliers have resumed work during the week at some of the pits of the following gentlemen, at the old price (3s. 9d. per day) for thin coal; some of them, we understand, are receiving 3s. per day.—At Messrs. Parsons, Shales, Leicester, Lowe, Fallow, Bostock, Banks, and Bognall. In the neighbourhood of Wrockward and Weston the principal part of the pits are preparing to commence—some have already begun—to work at 4s. per day for thick coal. A meeting of colliers was expected to take place at Wrockward-leigh yesterday (Friday) morning; they quietly dispersed again.—*Examiner*.

WHITEHAVEN.—On Friday last the annual meeting of the owners and masters of vessels employed in the coal trade was held at the Black Lion Inn; Whitehaven; a good deal of conversation took place respecting the present unproductive state of the trade and other matters connected with it, after which the following gentlemen were appointed a committee of management for the ensuing year:—Messrs. W. Miller, W. Giltkell, J. Cowman, T. Fawcett, J. Tyson, B. Barwick, W. Carruthers, J. M'Name, T. Cornick, J. Walker, and W. Sherwin. A vote of thanks was then given in

FALMOUTH HARBOUR.—To ENGINEERS, CONTRACTORS, and others.—The Falmouth Harbour Committee are desirous of RE-OPENING TENDERS for DEEPENING PART OF THE INNER HARBOUR OF FALMOUTH, and for removing therefrom either 10,000, 60,000, or 9,000 tons, as may hereafter be decided upon.—Persons tendering must deliver separate estimates for the several quantities, and state separately the price per yard or ton for which they will raise and discharge the soil, and for which they will remove and deposit it. The work to be accomplished will require sufficient power to remove the soil from a depth of water not greater than twenty feet not less than eight feet. All communications to be made to the Falmouth Harbour Committee, or to W. J. Green, Esq., secretary thereto, at whose office plans and specifications of the work required to be done may be seen, and every information obtained, and where tenders will be received until the 13th day of October next. There is no rock within the space proposed to be excavated. The material to be dredged is well adapted for demand, for masonry purposes. Specimens of the soil already raised may be sent to any party if desired.—Dated Sept. 12.

SALVAGE OF "LE TELEMAQUE."

Capital, £100,000, in 2000 shares of £500. (4d) each, which give a claim on one-half of the proceeds of the salvage, subject to a duty to the French Government of twenty per cent. The cargo is estimated at upwards of £1,000,000 sterling. An account of the vessel is given in *The Times* of September 12 and 13, from their own correspondent. Notices, prospectuses, and all information required, may be obtained from John Foster, Esq., No. 61, Jamaica-street, St. James's.

THE PATENT SAFETY FUSE.
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonies to its usefulness with which the Manufacturers have been favoured from every part of the Kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c., &c.—

"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and CO., LTD., CAMBRAI, Cornwall.

RUSSIAN STEEL-IRON—CCN D.—The undersigned having been appointed SOLE AGENTS for the Mousa, Dronfield in England, the undersigned mark of iron can only be obtained through them, at:

18, HIGH STREET, HULL, and
29, AUSTIN-FRIARS, LONDON, at

LIVERPOOL, they have appointed Messrs. Clegg and Son, their agents. The undersigned particularly request all buyers of the CCN D to make their purchases through them, or through their agents, which will effectively put a stop to a fraud which is extensively practised by unprincipled parties in selling a lower grade inferior iron, with a counterfeit mark of the CCN D, by which manufacturers have greatly improved upon, and the old favourite genuine mark majority of the

9th, Australia, Sept. 7.

ANTHONY AND GOLDBECK.

CARSON'S ORIGINAL ANTICORROSION PAINT, specially patronised by the British and other Governments, the Honourable East India Company, the New River Company, the principal dock companies, &c., is particularly recommended to the nobility, gentry, West India proprietors, merchants, and others, it having been proved by public bodies, and gentlemen of the best distinction, to surpass all other paints as an outdoor preservative. It is adapted for every description of iron, wood, or brickwork, copper, tin, &c., fronts, however exposed to sun or weather. Any labourer can lay this paint on. Colours, light stone, drab, and yellow ditto, light and dark lead, copper, chalcocite, dark and bright red, and black, six per cent., invisible green tint, deep and bright green ditto, per cent., in cans of 20 lbs., 40 lbs., and 112 lbs. each. Oil and brushes, &c., &c. (successor to the inventors), 15, Tokenhouse-yard, back of the Royal Exchange, London, where the most startling testimonials may be seen from the nobility and gentry, who have used the anti corrosion for many years.

PAVING, SIXPENCE PER FOOT.—POLONCEAUS' PATENT BITUMEN PAYING COMPANY, Essex Wharf, Strand, London.—This bitumen forms excellent foot-walks, garden walks, floors of warehouses, stables, nail-houses, coach houses, &c., and is particularly suited to basements, as it completely prevents all moisture from penetrating, effectually excludes rats and other vermin, and is also free from smell. This company has (among other works) laid the cellars and corridors of the new model prison, amounting to 100,000 square feet.—Particulars may be had on application to JOHN PILKINGTON, Esq.

TO ARCHITECTS.—SEYSEL ASPHALTE COMPANY.—CLARIDGE'S PATENT.—Established March, 1842, for working the Mineral Asphalte Rock of Pyrenean Beyrouth. This valuable material has been extensively used, since its first introduction into this country, for the following purposes—Foot-pavements, public and other, in the carriage approach to mansions, garden walks, and terraces, the flooring of kitchens and other basement offices, also of coach-houses and stables, dog kennels, horse stables, cow houses, pigsties, poultry-houses, hen coops, and mattings.—For roofing, covering of railroads and other arteries, the lining of underground culverts near rivers, to prevent the ingress of the tides; also in covering the ground lines of walls, to prevent damp-rotting, thereby rendering the basement stories in the worst situations both dry and warm. It is an excellent cement, as applied to docks, breakwaters, or walls built for resistance to the encroachments of the sea. For lining of tanks, bathing ponds, and other hydraulic purposes. Several extensive works have been executed by this company for the Board of Ordnance and her Majesty's Commissioners of Woods and Forests. The Asphalte has been used at the Thames Tunnel, also at the London and Greenwich Railway, where it has been laid over a surface of 400,000 superficial feet, to prevent the penetration of water, at the Great Western, Birmingham, Midland Counties, South Western, Brighton, and other railways, at the South Metropolitan, Highgate, and Newmarket Countries. The Asphalte of Beyrouth is perfectly free from smell, and is not acted upon by change of temperature.—Books of testimonials, with a scale of prices, can be sent to hand at the company's depot. J. FERRARI, Esq., Stanhope, Surrey side of Westminister Bridge, Sept. 14.

TO ARCHITECTS, BUILDERS, and others. For the purpose of securing the use of the genuine article, architects and others are particularly requested to insert the specifications—"The Seysel Asphalte's Patent," and not merely "Asphalte," or "Bitumen," &c., in their drawings where these terms have been used, gas tar, and other worthless and imitative compositions have been introduced.

PUBLIC COMPANIES.

METINGS.		
St. Stephen-Jane	Sept. 23	2.
Station, Stockton	24	12.
British Gas Light Co.	25	1.
Royal Mail Steam Packet Co.	25	1.
Southampton Docks	25	1.
Barkers and Sanderson Railways	26	1.
Treloge Consols Mining Assoc.	26	1.
South Tiverton Mining Co.	26	1.
South Metropolitan Gas Light, &c.	26	1.
Temper River Lead Mining Co.	27	2.
Mid-Aztec Gold Mining Works	28	1.
DALLAS.		
20 per cent. on Sept. 28.—Glyn, Hallier, and Co.		
per share, Oct. 10.—Augl. Steamer, &c.		
21. 10 per cent. on Sept. 28.—Anastasiou	Sept. 28	20.
100, Lombard street	29	20.
George and Vulture	29	1.
Commissioners Room, Sanderson	29	1.
Office, 25, Threadneedle-st., Oct. 6	29	1.
George and Vulture Tavern	30	1.
Three Tuns Tavern	30	11.
Office, 21, Fleet-st., Oct. 6	30	2.
George and Vulture Tavern	31	1.

STOURPORT & NEWTON JUNCTION.—JOHN & S. MELLOR RAILWAY.—Met.—20 per cent. on Sept. 28.—Glyn, Hallier, and Co.

21. 10 per cent. on Sept. 28.—Anastasiou

22. 10 per cent. on Sept. 28.—Banks & Sons

23. 10 per cent. on Sept. 28.—Banks & Sons

24. 10 per cent. on Sept. 28.—Banks & Sons

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IMPORTANT GEOLOGICAL ADDRESS.

BY THE REV. W. BUCKLAND, F.G.S., ETC.

At the celebration of the union of the Leeds Literary and Mechanics' Institutions, Dr. Buckland, the eminent geologist, made the following observations:—Agricultural chemistry was now hailed by the agriculturist as a sword in his right hand, to break through the barriers that have, till within these last very few years, impeded the progressive improvement of the soil. It was to the result of chemical discoveries, aided by judicious agricultural observation, and by meteorological, electrical, geological, and, in fact, the combined operation of every science that could be pressed into the service of procuring food for man, that they must look with confidence for an efficient, and more than efficient, remedy, for those increasing numbers that were daily coming into the world, and which must be fed. Professor Liebig showed that the vegetable kingdom had for its final object the adaptation of elementary matter to the use of the animal kingdom. It has been often asked—What was the use of such an infinity of organized beings? The plants of the field were beautiful, but it might be said that half of them were never seen. But they had their use. If they looked to the atmosphere which they breathed—if they looked at the earth on which they trod—if they looked at the substrata beneath the earth—all—all were full, teeming with riches, and with demonstrations of the goodness and greatness of the Creator. In the rain that fell from Heaven, Professor Liebig had told them that there descended the elements of fertility to the earth, and in the dew that fell in the summer nights there descended again the elements of fertility. They had seen the effects of all this before, but, until lately, the manner in which these effects were produced was unknown. It was not water only that the dew-drop contained—it brought down ammonia, which arose from the putrefaction of animal and vegetable matter; and so, in purifying the atmosphere for their lungs, it fertilised the earth. It also brought down carbonic acid, which they evolved in such enormous quantities each day from their lungs, and which loured in such gorgeous clouds over this murky town of Leeds—all that smoke which made dense the atmosphere of this great manufacturing town; it brought down all that closeness and denseness, for the purpose—he would not say of maturing—but of feeding, by a more delicate process, those beautiful trees and gorgeous crops of corn, which they saw in the park of the noble earl (Pitwall) and other persons whose estates adorned this neighbourhood. They had at Leeds long been in the habit of impressing fire and water into their service. It was long ago observed by a negro, on his first coming into this country, that the pig was the only gentleman in England. "You make (said he) fire work, water work, steam work, wind work, everybody work, and the pig is the only gentleman in England." There was in this neighbourhood one point especially deserving of notice. He had seen most of the coal-fields of England, and the surface of most of them—of South Wales for example—was as to agricultural purposes entirely barren—large and extensive mountains covered with heath and grouse, which were all the proprietors got from it. But what was their more fortunate lot? Why, that from Nottingham, at one end, through Chesterfield, Elsecar, Barnsley, Wakefield, till they came to the boundaries of the coal formation on the wharf—what had they? Not only one of the richest coal-fields in the world, but they had that same coal-field loaded, saturated, gorged—as Elsecar and Barnsley would testify—gorged with iron ore, two, three, and four feet in thickness; the coal alongside of it, ready to reduce, at the least possible amount of expenditure, the ore which was worthless, into that metal which was most precious and valuable. Not only had they this extraordinary, this most especially extraordinary condition of the subsoil, but, on the surface, instead of the wilderness which a coal-field usually presented, they had fields of the highest order of agricultural capability, smiling parks, and waving woods, from the splendid mansion of Lord Harewood at one extremity of the coal-field, to that of Mr. Gally Knight at the other. He would not sit down without observing, that it was to this very coal-field that the great bulk of the population of the West Riding of Yorkshire owed its existence. Let them go by the railway from Leeds to Manchester, and count, if they could, one quarter of a mile which they would not find studded with swallows' nests along the crags, which suspended over that most extraordinary geological chasm produced by geological events. The meeting would pardon him for being somewhat professional. He considered it bad taste to say before him; and he held it good taste to say that there was nothing like leather. He was prepared to say that but for the geological circumstances he was referring to, not one in a hundred of the persons he saw before him would have had existence. From the bottoms of those lakes, and seas, and estuaries, in which deposits had been going on for ages, had been raised by the action of earthquakes more intense than imagination could conceive, that great chain of mountains that separated them from the valley of Lancashire, and which separated Leeds from Manchester by the almost impassable barrier of Blackstone Edge. They had there the coal "set on edge," and ploughing on one side to the eastward, and on the other side to the westward, and covered over in Lancashire and in the neighbourhood of York with red sandstones, and with the wrecks of the revolution which caused this elevation. When that elevation of the mountain chain took place, it brought from the bottom of the sea the local strata to which he had referred, and where this movement of a portion of the globe, this bursting, so to speak, of one part of the great onion, occurred, it was by all the laws of physics accompanied by a series of fractures. In consequence of these phenomena, they had five great transverse fractures eastward and westward, that had been the causes of the valleys, down which flowed the magnificent rivers which united in the Humber. They had the river at Wakefield, the river that passed through Leeds, the Wharf, the Nid, and the Swale, and every one of these rivers was generated by transverse fractures, which in the main—not literally—were at right angles to the great line of elevation. Above all, they had the fracture, the great chasm, by which they went from this town, through Sowerby, Todmorden, and Rochdale, to Manchester. What was that? It was that great chasm, that great gap of the backbone, when the great giant laid prostrate in the earth was brought up 1200 feet to be quickened into a state of activity, and to present them with these beds of coal which had been the means of carrying into operation their ingenuity and mechanical invention. He could not but think that it was becoming, on the present occasion, that he should allude more particularly to the operations of Providence, which were so obvious, at least to himself, who had laboured for thirty years in investigating the structure of the interior of the earth, but which were the less obvious, perhaps, to those whose condition in life had not brought before them the phenomena so striking to himself. It was, he thought, a duty that he should not sit down without publicly stating that the study of these great works of Providence produced in his mind the liveliest conviction of the power and goodness of the Creator. Other friends who were occupied in some of the highest departments of physical investigation, he knew to be animated by the same feelings; and one of his friends in London, who was occupied in microscopic examinations, said that he felt disposed to fall on his knees at every new discovery he made. It was quite unnecessary, after what he had stated, to impress upon them the enormous debt which the inhabitants of this neighbourhood more especially owed to Providence—not only the common debt which all mankind owe for their existence and for the ordinary blessings of life, but that special debt they owed for having been born on a soil so pre-eminently favoured in the surface, and so beautifully enriched in the sub-surface. In Leeds, he was quite sure, he need not do more than bring the knowledge of the fact before their imagination, to excite in them those sentiments of deep and fervent piety which were due to such an occasion.

ELASTICITY OF WHIRLWINDS.—M. Arago, in allusion to the opinion expressed by several persons of the elasticity of whirlwinds, mentioned, at a late meeting of the Academy of Sciences, some observations made by M. Horatio on a storm, on the 24th ult., in the department of the Andes. This gentleman relates, that, on the occasion referred to, the iron bars of windows, the guitars of sheet-iron, the plates of insurance companies, and other metallic objects, were carried away by the whirlwind, thus indicating, beyond doubt, the presence of electricity.

CONTRACTIVE POWER OF COAL.—From an extensive series of experiments lately made, it has been ascertained that 1 lb. of Wall's End coal will support one degree of heat to 2000 lbs. of water; of Langbrook, to 9400 lbs.; charcoal, to 10,000 lbs.; and of anthracite, to 12,000.

ORIGINAL CORRESPONDENCE.

MR. HALL'S SMOKE-COMBUSTING APPARATUS.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—In sending you my observations on Mr. Hall's two letters, to be inserted as an advertisement, I have to request you will notice the error into which you have inadvertently fallen, in supposing that Mr. Hall's second patent was dated in 1838 instead of 1841, and which would favour the idea of my patent of 1839 having followed, instead of preceded him.

Liverpool, Sept. 20.

C. W. WILLIAMS.

WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Perusing your valuable Journal, No. 362, page 244, in which appeared a copy of a publication from Captain Tregaskis, headed "Economic Application of Steam-power to the Movement of Water-Wheels at Wheal Uny," caused me more than ordinary surprise. Let it be allowed that Wheal Uny engine performs in pumping equal to 76,000,000, after all, the power applied over a water-wheel, for stamping ore, will be reduced below 26,000,000. Neither Capt. Tregaskis, of Wheal Uny, nor Mr. Anthony Rose, of Wheal Friendship, can, in any way whatever, erect a wheel of seventy-six feet diameter, and pump up all the water used in working the wheel to the height of twenty-six feet—that is, a seventy-six foot wheel cannot raise the full stream used to perform a revolution of a water-wheel so much as twenty-six feet high, or a thirty-eight foot fall thirteen feet high. And now, Mr. Editor, allow me to say, however economical your correspondent may be, he is not economical enough to arrange his machinery so as to perform impossibilities—consequently there is no economy whatever in the plan. I am perfectly aware that it has been boldly asserted—and that by eloquent lecturers, that Wheal Friendship can perform duty of 72 per cent., or the average of seven wheels 61. But, Sir, a bold assertion, though dropping from the lips of eloquence, will not pass for a fact. A man of science will in no way whatever tolerate anything to shelter under the mantle of an unfounded assertion, but must have everything proved by a mathematical demonstration. A few weeks past I was under the necessity of requesting an engineer in this neighbourhood to give me an exact account of the real duty performed by Wheal Betsy, &c., who informed me there was a scientific gentleman residing at Tavistock, near the mines, whom he expected would write you, Mr. Editor, on the subject. However, this gentleman declines entering into a public controversy, but kindly wrote a letter to my engineer, who sent me a copy—the publication of which, I hope, will be gratifying to each party.—"I beg to assure you that I never had cause to doubt the correctness of the rule for computing the power of over-shot water-wheels, given in the *Practical Miner's Guide*. The work has been before the public seventeen years, and I have never heard of the truth of the rule being disputed (except the recent dispute in the Journal), but, on the contrary, universally acknowledged a good one." And, in speaking of those cavillers, stating 50, 60, and 72 per cent., says, "not one of the writers on the subject, that I have noticed, has given anything like a rational formula."

The tables close thus—"18,750 lbs. of water performing a revolution to a forty-six foot over-shot wheel, will work a twelve-inch lift of pump, 113 fathoms deep, six-foot stroke." Here is something rational—I have met with no other rule to equal it. And now, Mr. Editor, I wish to say, at the close of my letter, that I write for correct information, wishing to have the truth, the whole truth, and nothing but the truth.

Swansea, Sept. 16.

H. MCKEEVENISH.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—The following Cornish method of assaying copper ores, as given by Sir H. De la Beche, in his *Geological Survey of Cornwall*, may, perhaps, be of service to the Cheltenham correspondent of your last week's paper.—"The best process is to take 400 grains of the sample of ore, pound it fine, sift it, and place it in a crucible to roast in an air-furnace, keeping the ore stirred frequently with an iron rod. When the sulphur is considered to have been sufficiently driven off (for the ores are usually either bisulphurites or sulphurates), the ore is taken from the fire, and allowed to cool gradually in the crucible; if then the upper part appears red or brown, and the under part black, the proper roasting is supposed to have been given. A standard flux, composed of borax 5 dwt., lime 1½ handful (diameter of the ladle about three-quarters of an inch, and depth half an inch), and powdered fluor spar 1 ladle, is then mixed with the roasted ore, and put into a crucible, the mixture being covered with salt. It is then melted, and what is termed a *regal*, or *regulus*, produced. This regulus is thought good if it will produce from 8 to 12 in 20. The grey sulphurites, the black oxides, and the carbonates, have sulphur added to them to 'throw back the ores,' as it is termed, as they are considered not to have enough of it for the purposes of the assay. To fuse this regulus it is pounded and roasted in a crucible until the sulphur is considered to be driven off. A flux—of nitre 3 dwt., red tartar 10 dwt., borax 5 dwt., and salt 2 ladles—is then added, and salt sprinkled over the top of the mixture. Coarse copper is now obtained. If this comes out clean, as it is termed, the assay is put into a crucible without flux, and when melted the crucible is taken out of the furnace, and shaken until the surface appears blue. A refining flux is now prepared by mixing two parts of nitre and one part of white tartar in an iron mortar, and stirring the mixture with a red hot iron until defluxation has ceased. The flux thus made is powdered and sifted when cold, and 5 dwt. of it are added to a handful of salt, put with the assay into a crucible. When all is melted the copper is poured into one mould, and the slag into another. The latter is again melted with two ladles of red tartar, and the small bottom, or prill, of copper, now found, is added to that previously obtained, and the assay is completed."—Such is the kind of process supposed to give fair accurate assays of copper ores.

St. Ives, Sept. 20.

J. Y. WATSON.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—You expressed a wish some time since to hear from me again: I now send you a few notes of the *modus operandi* pursued by the possessors of the shares of this company, which you may use as seems best to you. The publication of the way they contrived to cause a confidence in their undertaking cannot be without a good effect, as a kind of occasional lesson, to warn thoughtless adventurers of the dangers they incur by placing dependence on unworthy or untried guidance.

Most of your readers know that the directors of this company divided amongst themselves and friends 90,000*£* in free shares, which very moderate amount they expected the deluded shareholders to pay, or the public to purchase—and, unfortunately, many shares were purchased, and the whole amount of 50*£* per share paid. To encourage their salesmen a per centage seems to have been paid on all shares sold, and a bonus of free shares given: on which shares these men worked as on fictitious capital, affirming to those whom they had, or intended to deceive, that they had themselves embarked so much money in the concern, and, for their own sakes, would look to its safe and profitable investment with all the security that their own interest and that of their friends demanded, so that were there a chance of failure, or of fraud, they would only be involving themselves in the hazard and the loss. In order more peculiarly to impress the hearer with an idea of their honesty, each of these gentlemen garnished his tale with information as to how he personally had been enabled to purchase so many shares. Mr. W. Clouston, Esq., got rid of his shares by selling them—*sans sey* to his own brother—but surely he could not be so base as that. The no less distinguished Mr. Max Shrubsole "played his part" in the same approved fashion. His tale was, that a friend of his son had advanced him 10*£* for his deposit, which he had paid into the bank;—and this man actually paid another person's money to Maxon, Glyn's as his own, and it remained in his name, although he never paid one shilling—of course the payments of the person he imposed upon must be so much deficient. The other, a Mr. Jenkins, used to boast that the company should have all the good things, he could not see why some of them should not be dispensed among the bondsmen, and concluded with an earnest appeal to his dear brother to buy some of the free shares. It is refreshing to know that this gentleman has been expelled the society of

which he was a member, after a patient and impartial hearing, by men as otherwise interested than as honest men, jealous of the credit of their own church, and judging not by the quibbles of the law, but from a common sense view of the question.

I have read many accounts of the deceptions practised in your great metropolis, but few seem to have concealed their schemes with such finesse, or to have carried them out with such an utter disregard of truth—indeed, from the Alderman at the head, to Shoobridge at the tail, they have proved accomplished predators on the fruits of honest industry. They tell me one has served enough already to be Lord Mayor of London next year—surely this is not true, the citizens of London had wot to be a *little* more particular than to have such men as Shoobridge, Weston, or Wood for their chief magistrate.

Nottingham, Sept. 21.

TALACRE COAL AND IRON COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—The enclosed circular, signed by the solicitors, has been forwarded to me, and by it you may perceive, that, however backward the trustees, Wood, Weston, and Hyndman, are in paying their share of the liabilities they have fastened on the company, they are not backward in requiring the aid of the shareholders when they find themselves involved in the net only intended for others. Of the 60,000*£*, which the deluded shareholders have already paid for putting confidence in Alderman Wood and his co-adjudicators, how much has been paid, think you, by the honourable trustees? Why, about 600*£*, the greater part of which found its way back into their pockets in the shape of law or preliminary expenses, along with the 22,000*£* of free shares these three gentlemen appropriated to themselves. Have even one of these trustees subscribed so much as a sovereign towards the 33,000*£* of debt which Alderman Wood declared due last year, or sought to relieve the shareholders in the slightest degree from the difficulties with which they were surrounded? No, they have not touched the burdens with their little finger, and whatever ruin, privation, or sorrow, is endured by the proprietors, the trustees give neither sympathy nor relief. Many are driven from their homes and families—many are paying every farthing they possess to escape personal molestation—some have paid thousands—but they are as far off release and quietness as ever. Knowing these things, how can even the solicitors of the trustees have the face to ask a proportion towards the payment of the rent now due?" Bring your clients, gentlemen, into court with clean hands, we should say; wash them from the guilt of trespassing honest men to their ruin for personal benefit, and then you might expect answers to your circular—as it is, this is the only one you will obtain, and only obtain it through the courtesy of the Editor of the *Mining Journal*. The circular says, "there is no hope of raising money to work the mines with advantage." I find, by reference to the prospectus, that the capital required for working the mines, including 250*£* for fifty cottages, &c., and also 7500*£* for capital for wages, is set down at 36,250*£*. Now, it would seem by the report of September 30, 1841, that 50,000*£* had been received in cash, and 33,000*£* of debt had been incurred—making a total of 83,000*£*, and instead of 67,000*£* pair of pits, fifty cottages, and the floating capital, that were to have been had for 36,250*£*, they expended or distributed 83,000*£*, and have neither pits, cottages, nor floating capital; and then their solicitors, with admirable equanimity, observe, "there is no hope of raising money to work the mines"—they need not have added, "with advantage," for Alderman Wood knows that you might as well sink a pit in Corbet-court, Gracechurch-street, in front of his own office, and seek to work that to advantage, as to talk about working Pleton to advantage. The trustees and their fellow-directors took the mines for their own benefit, as their subsequent conduct has sufficiently shown; they bought them for a small amount, they trebled that amount, and divided it among themselves, and they now seek to place the onus of their trusteeship upon the proprietors; however, little chance there is of it being done, the endeavour is in fact keeping with the chicanery so long practised on the company.

Great Russell-street, Sept. 21.

ANNA.

CIRCUS.

Sir,—Sir Pyers Monty, Messrs. Margraves, Douglas, and the other lessees of the various mines leased to the Talbot Company, have applied to the lessees and trustees of the company for the arrears of rent now due, which amount is about £1000. They have also threatened proceedings against the lessees and shareholders for recovery of these mines, and have actually commenced actions against several, and threaten all the shareholders with actions for usury and non-payment. In the present state of the affairs of the company it seems vain to hope that money will be forthcoming in a sufficient amount to work the mines with advantage, while the doing which has occurred in consequence of the disputes amongst the shareholders increases the rent without bringing anything in the shape of profit to answer the same. Under these circumstances it is considered desirable to open a negotiation for the surrender of the various leases, in order to put an end to further responsibility, and we are instructed therefore, by the lessees and trustees, to ascertain from you whether you will consent to such a surrender, and also to inquire in what proportion you will contribute towards the payment of the rent now due, and the expenses which have been incurred. It is of the utmost importance that your answer should be obtained as soon as possible, so as to enable us to act accordingly. We shall consider the same when you receive this, and we shall advise the trustees forthwith to surrender the property. We also beg to inform you, that unless you signify your intention to contribute a reasonable proportion towards the payment of the rent now due, that we must, on the part of the trustees, decline to defend any proceedings that may be taken by the respective landlords, and allow them to adopt such remedies against the shareholders for the recovery of the rent and premium as they may deem proper.

ROYAL MAIL STEAM-PACKET COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I was engaged on perusing the "report" in the *Times* of the Royal Mail Steam-Packet Company's meeting, held last Wednesday, to find that Mr. Joseph Liggins had overcome his modesty and diffidence, and actually moved—"That the meeting should adjourn, in order to give every shareholder an opportunity of reading the report of the directors, with a view to a deliberate discussion."—Now, really, Mr. Editor, this is rich, the said Mr. Joseph Liggins having, in his capacity of chairman of the Southampton Docks Company, repeatedly opposed the same rational course—in fact, having invariably, when questions which he did not like were asked him at the various meetings, given (what the *Times* called, in their "report" of the last half-yearly meeting, held on the 31st August) "captious answers."

T. R.

Corkhill, Sept. 23.

SUBMARINE EXPERIMENTS—H. FULTON AND DR. PAYNER.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I regret pressing engagements, previous to an unexpected speedy departure from England, prevent me at present replying to the communication of Dr. Payner, inserted in your last week's Journal, the statements contained in which, so far as regards Fulton, I am not at all disposed to admit as correct. My impression (and which I have no doubt of being enabled to prove a correct one) is, that he was able to remain almost as long in the water under water, without being obliged, as the Dr. asserts, to come up to the surface to replenish the air, in his submarine boat; but, in the absence of the means of obtaining that correct information (and which my time will not allow me to seek here) on which to found a satisfactory answer, I am compelled to postpone a refutation until my arrival in the United States, when I will also attend to the inquiry of "A Submarine." If it is not trespassing too much on your patience, I should also wish you to allow me space for notes on several other matters recently treated on in your columns.

J. F. C. (of New York).

Temple, Sept. 19.

NEW PATENTS FOR SEPTEMBER.

C. F. Guillard, notary public, Birkenhead, for certain improvements in the construction of railways.

J. W. Robson, engineer, Jamaica Avenue, Commercial road, for certain improvements in machinery and apparatus for raising, hoisting, carrying, moving, and drawing, &c.

W. H. Newell, civil engineer, Chancery-lane, for improvements in machinery or apparatus for making or manufacturing screws, screws, bolts, and rivets—being a communication.

W. F. Cooke, Esq., Cheshunt, Hertfordshire, for improvements in apparatus for transmitting electricity between distant places, which improvements can be applied amongst other purposes, for apparatus for giving signals and announcing alarms of distant places by means of electric currents.

F. Thackeray, engine-builder, Lower Pelling, Durhams, for certain improvements in transmitting the power of steam engines, and of other machinery.

J. White, jun., civil engineer, Castle, York, for certain improvements in propelling machinery.

W. H. Jones civil engineer, Mauritius's Lane, London, for methods improved to facilitate the making and carriage of ways, railways, and other carriages, and in the conveyance of goods, and materials, parts of which improvements are applicable to the business of traction in other directions.

A. French, Painter, colourist

MINING IN AMERICA.

GEOLOGICAL AND STATISTICAL NOTICE OF THE COAL MINES
IN THE VICINITY OF RICHMOND, VA.

By A. S. WOODLAWN, Esq., President of the Mid Lothian Mining Company.

(Continued from last Journal.)

As to the quality of the Mid Lothian coal, I refer to the samples sent you, and the certificates contained in my circular, also forwarded to you, adding this fact, that this coal, upon trial, has been found to suit a greater variety of purposes than any coal hitherto discovered; and of this you will find ample proof by attentively examining the circular referred to. The whole effective area of these mines, including the coal-pit heads, and top and bottom banks, is 150 acres and more, with some twenty-five miles. Most of these miles will be discontinued as soon as the steam-engines are erected. The ventilation of the mines is committed to the management of a Neapolitan miner, or gas man, of much experience and skill, trained by Mr. Buddie, the distinguished English mining engineer. The ventilation is kept up by means of brattice work of boards, and aided by a furnace under ground. The atmospheric air is taken down on one side of the shaft, and crosses the whole drift, passing out by the furnace in the opposite side of the shaft. On the upcast side the air is received some thirty feet from the bottom of the pit into the shaft, and at the top it is boxed up so as to throw it off fifty feet above the mouth of the shaft. Large quantities of inflammable gas are thrown out from the coal in the mines constantly, and any interruption in the air causing the mines with regularity, slight, and would, be attended with disastrous consequences from an explosion of the gas. Mr. Humphrey Davy's lamp is used at the mines, more as a pioneer than otherwise; no mines are considered safe that require to be worked by safety lamps. They ought to be used only in going through the mines to see that all is right before the miners are put to work; or to be used to fire the mines in case they are overcharged with gas.

The interior of the mines contains two railroads of a very simple construction. Iron bars, two inches by half an inch, are inserted, edge up, into cross pieces of timber, four by two inches, laid at the bottom of the drifts. The iron is imbedded into the timber about six inches deep; no welding is necessary, and the road can be driven at pleasure. Mules are used on these roads below, and thrive and look better there than those above ground. Impressions of fishes and vegetable remains, such as ferns, bark, and knots of wood, are often found in the slate lying over coal in this neighbourhood. They were particularly numerous at the Union Pitt and mines of the Creek Company, which seem to be a distinct formation of coal from the main formation, and many suppose it a deposit at an earlier date. As no sinking is now going on at either of these mines, I am unable to procure and forward you any samples, as the old pits have been disengaged. I will be upon the watch, and secure for you whenever any specimens that may be obtained, and worthy of your attention.

The coal basin extends across Chesterfield county to the south to the Appomattox, or perhaps a little beyond the river into Amelia county. No coal, however, has been found of sufficient thickness to justify working nearer the river than Bowles' old pits, distant one mile to the north. Between these pits and Hill's old pit, distant five miles still further to the north, is supposed to be the only part of this section of the basin that will be found valuable from the abundance of its mineral treasure. The coal measures may be traced on the north from these limits to the James River Pitts, and south a little beyond the Appomattox, but no exploration has yet discovered coal beyond the limits mentioned, in sufficient quantities to be wrought to profit.

Hill's pit, mentioned above, was some twenty years since leased by a company of gentlemen in Petersburg, wrought for a few years and abandoned; subsequently an incorporated company purchased them, but, after a trial of two years, gave up further search for coal, having been unsuccessful, though the land is still owned by them. About twenty years ago Hill's pits were first put in operation; these were worked for five or six years, and likewise abandoned. The coal at both of these workings was of excellent quality, and particularly well adapted to the use of grates and other purposes requiring gas and flame. The exceedingly faulty character of the field at both of these points led, no doubt, to the abandonment of these workings. These are the only workings that had been attempted on the south side of this great coal basin, until two years since, when coal was accidentally discovered upon the bank of James H. Cox, east south of Hill's old pit, and three-fourths of a mile distant. This coal was first discovered on the side of a hill, where it had been uncovered by the washings of heavy rains; for the coal here along the whole line of outcrop reaches within a few feet of the surface, being only covered by a coating of soil, sand, and gravel. Since its discovery, an average of about twenty hands have been engaged in exploring and mining it, and, from the explorations already made, the belief is entertained that a part of the basin presents a more regular, uninterrupted, and undisturbed formation than this. The thickness of the seam varies from seven to fifteen feet. The coal is of superior quality, and particularly suited to grate purposes, steam-engines, the blast-furnace, gas-works, &c. The accompanying certificate* from Dr. Andrews shows its richness in volatile matter, and the small quantity of ash it contains. At present the operations at these mines cannot be increased in any extent, in consequence of their distance from market, and the want of proper facilities for transportation. The present mode of transportation is to carry it in carts to the river, and thence by boats to Petersburg, at the cost in all of eight and a half cents. This high cost of transportation forbids, for a time, successful competition with mines enjoying greater facilities. It is designed to remedy this inconvenience by constructing a railroad to the Appomattox, a distance of five miles, or one to intersect with the Richmond and Petersburg road, and reach James River somewhere about Osborne's or Bermuda Hundred. The country through which both of these routes would pass is admirably adapted in the purpose, being very level and abounding in timber and other railroad materials. Either of these contemplated improvements would place these mines in a state of fair competition with any other mines in Virginia, or perhaps in this country.

These mines have recently been sold by James H. Cox to the Clover-hill Company, who are now working them with a force of twenty labourers. Moody and Johnson have a lease of Anderson's land, east adjoining that of the Clover-hill Company, and employ a force of twelve operatives. These two workings together, last year, produced 200,000 bushels of coarse grate coal—the fine coal not being able to bear the cost of transportation, is still remaining at the pit. Whatever has been said about the quantity and quality of the Clover-hill coal, is applicable to Moody and Johnson's coal, as all is taken from the same seam. The deepest shaft which has yet been sunk is 250 feet deep. The measures passed through were principally sandstones and shales. Impressions were frequently met with of ferns and other aquatic vegetation, but no fish or other animal remains. The bearing of this part of the field is to the west of south, and inclines to the west as you proceed to the south, until near the river it is west. The same is the case on the western surface. This induces the belief that the basin is here rounded off, and that, at a great distance to the south of the river, the coal formation entirely disappears. This belief is confirmed by explorations made on that side of the river. Several miles were worked recently on James River, on the western edge of the coal field, in Powhatan county, which are now abandoned, principally because the coal, both in quality and quantity, is not equal to the coal of Chesterfield, and will not bear working in a depressed state of the trade.

In Gloucester county, on the western edge, coal of good quality was formerly worked, and known as the Dover Pitt, owned by Anderson and Moody, and re-entered in the Dover Coal Mining Company. These mines are not now worked, the company having failed. Since the failure of the Dover Company the failure has reverted to the former owners, and on the east side of the valley, on the Gloucester and Roanoke side of James River, are several smaller ones of them now in operation, and some not. The largest appears to be that neighborhood, not the Messes. Cossens and Reed, the owners of several mines, in good working condition, employing about 150 hands, and raising one million bushels of coal the present year. Near these mines, on James River, are those of the Fuchardon Coal Company. The old mines are out of work, but a shaft is sinking, employing from fifteen to twenty hands. Now these are Womback and Reed's Mine to the Edge-Hill pit, are worked, but not extensively, by Fuchardon, probably employing some thirty hands, and producing about 60,000 bushels. On the north part of Cossens and Reed's property, Fuchardon and Reed are engaged in hauling coal, but not working more than some twenty hands, producing the present year about

* Dr. Andrew's Report, Feb. 1842. The specimen of limestone coal from the Gloucester Pitt, which you left me to examine, belongs to the country called Cossens. It has a specific gravity of 1.65, a principal mineral matter, 1.65, iron pyrite, 0.05, mica, 0.05, and 0.05, talc. It is composed of two different varieties, both slightly worn by the fire, and is composed of two different varieties, one white, the other yellow, with a thin layer between the different fractions, the white dark greyish brown, yellowish brown. It ignites very easily, and burns with a lively flame, but burns very slowly to nothing. One hundred parts consist—

Coal

Volatiles

Ashes

Ore from the ashes

Sulphuric acid

Sulphur

Oxygen

Steam

Water

Ozone

Carbon dioxide

Hydrogen

Ammonia

Sulphur dioxide

Sulphur trioxide

Sulphur tetrads

Sulphur pentads

Sulphur hexads

Sulphur heptads

Sulphur octads

Sulphur nonads

Sulphur decads

Sulphur undecads

Sulphur dodecads

Sulphur tridecads

Sulphur tetradecads

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GREAT WHEAL CHARLOTTE MINING ASSOCIATION.
The half-yearly general meeting of the shareholders in this company was held at the George and Vulture, Cornhill, on Friday, the 23d inst.

W. ASHLEY, Esq., in the chair.

The SECRETARY read the advertisement convening the meeting.—Mr. NIBBIE read the minutes of the last meeting on the 29th March last, which contained the resolutions then passed, giving the directors the option of abandoning the mine, with the exception of two points of trial, which were confirmed.

A short report from the directors was then read; it stated the increased disappointment they felt in meeting the shareholders on this occasion, in having to inform them that the costs and liabilities of the mine, over and above the produce of the ores and machinery, was £300, in addition to the sum of £500, which had been subscribed by some shareholders, and was to be returned—making £500, to be provided for; to meet which a call would be necessary of £1. 6d. per share on 10,000 shares, and they hoped the honourable feeling on the part of the shareholders would induce them to come forward and assist them out of the very unpleasant situation in which the unfortunate affairs of the mine had placed them.

From the statement of accounts it appeared, that, after the sale of the ores and machinery, which had taken place since the resolution to abandon the mine had been carried into effect, there still remained to be provided for, the sum of £500, as stated in the report.

A GENTLEMAN, who attended as the representative of a shareholder, who was now in Cornwall (but who did not wish his name to transpire), stated, that a report was in circulation in the county that some parties were waiting to benefit themselves by this mine, as soon as the present shareholders relinquished it; that he had received a letter this morning, stating that two men were now at work, and raising rich ores, and that the observations made were, that "if the tributaries could get a livelihood, surely it would pay the gentlefolk;" another said—"Never was such a thing known in Cornwall to knock up such a mine; that it might be accounted for why Mr. R. Taylor recommended the sale of the materials, as a balance was due to him, which was to be paid out of the first receipts," &c.

The CHAIRMAN, as well as Mr. HARRISON, Mr. FIELD, and others, expressed their astonishment at such a report, as it was well known what pains the directors had taken to get at the best information to direct them in their steps; that, in addition to the reports of their agents (Messrs. R. Taylor and Morcom), which had been the means of inducing them, as well as the shareholders, to take proceedings for the abandonment of the mine, other reports had been received from Captains Richards and Francis, and the trial of the eastern ground had been discontinued, from the increasing hardness of the ground, and the sums set apart for that trial having been expended before its completion.

A lengthened conversation then took place on the subject, and several letters from Mr. Richard Taylor and Captain Morcom were read, recommending the steps taken by the company as the only ones which could, with prudence, be taken, as no hopes of remunerative working existed.—The CHAIRMAN and Mr. HARRISON also expressed how severely themselves and Mr. Carr felt the disappointment they all, in common, experienced, and considered that they had not been at all well used by Mr. Taylor, whose reports had ever been most sanguine, and under a promise never to bring the mine into debt, and that now, on being applied to, letter after letter was sent him without eliciting an answer, and, when close pressed, and one did arrive, it was written in an off-hand cracked style, and was anything but satisfactory.—It was arranged that the directors should immediately apply by letter to Captain Morcom, as to the rumour extant of the raising ores, and the prospect any adventurers would have in working the mine, and requesting an immediate explanation.—With respect to the 2s. 6d. per share which it was stated would be necessary to raise the £500, as very little more than half the 10,000 shares would be paid upon, Mr. FIELD thought a very serious objection would arise, in calling upon those willing to pay for an extra shilling per share to cover the deficiency of defaulters; it was stated that the interest of the directors amounted to one-third of the whole concern, and their shares would be paid upon—that the deficiency to be provided for had arisen entirely in consequence of the depression of mining property generally, or the machinery sold would have realised a much larger sum, as had been estimated, and the directors said, of course, they must leave themselves now in the hands of the proprietors, many of whom, no doubt, would come forward from honourable motives.—The report and accounts were then passed unanimously, and also the following resolution:—"That, in order to enable the directors to pay off the balance of liabilities due at the closing of the concern, the shareholders be called upon for the payment of 2s. 6d. per share."—Thanks were then voted to the chairman and directors, and the meeting broke up.

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMBUSH MINING COMPANY.

Sept. 18.—I beg leave to inform you that the 110 fathom level west, and the wings sinking below this level, are without material alteration since last reported. In the 100 fathom level west the lode is fifteen inches wide, and worth £50. per fathom; at this level east the lode is six inches wide, and intermixed with ore; the lode in the eastern slopes, in the back of this level, is still about two feet wide, and worth £50. per fathom; the lode in the western slopes, in the back of ditto, is two feet wide, and worth £50. per fathom. In the ninety fathom level west the lode is sixteen inches wide, and worth £50. per fathom; the lode in the eastern slopes, in the back of this level, is eighteen inches wide, and worth £50. per fathom; the lode in the western slopes, in the back of ditto, is twenty inches wide, and worth £50. per fathom. In the eighty fathom level east the lode is sixteen inches wide, and producing stones of ore; the lode in the slopes, in the back of this level, is fifteen inches wide, and worth £50. per fathom. In the sixty-two fathom level east the lode is six inches wide, and yielding a small proportion of ore. In the twenty fathoms level east but little of the lode has yet been taken down. The tribute pitches, upon the whole, are still looking favourable. F. PHILLIPS.

TINCROFT MINING COMPANY.

Sept. 18.—The lode in the new engine-shaft is about two and a half feet wide, worth £50. per fathom in depth for the length of the shaft. The lode in the wings sinking under the 80f., to the east of the shaft, is about three feet wide, and worth £50. per fathom. The slopes in the back of the fifty are worth £50. per fathom. The slopes in the back of the forty are worth about £50. per fathom; and the fifty and west is worth £50. per fathom. We have not as yet seen the new lode beyond the cross-course, in the fifty east, but are driving north with the expectation of meeting with it very soon. The forty east and west are at present unproductive, although the lode in the west end has a kindly appearance. The thirty, west of engine-shaft, is producing some stones of ore. At the seventy-two, in the north mine, the lode is not so productive for copper ore as it has been, but is very much improved for tin. On the whole, our prospects are very encouraging. W. PAUL.

WEST WHEEL JEWEL MINING ASSOCIATION.

Sept. 19.—Buckingham's shaft, sinking below the seventy, is a little more favourable. The seventy east, on Wheel Jewel lode, is worth £50. per fathom; ditto west, on the same lode, is eighteen inches wide, grey, black and grey ore; this is a lode of great promise. The fifty-seven east, on Wheel Jewel lode, is worth £50. per fathom. The wings sinking below the fifty-seven are worth £50. The forty-two east, on the same lode, is worth £50.

S. LEAN.

BEDFORD UNITED MINING COMPANY.

Sept. 19.—I beg to hand you my report of these mines. Monsieur Louis— I am happy to say that we have forced the water, as so to enable the men to resume their work this day. In consequence of the water being in, we have not taken down any lode in the forty fathom level east and west since my last. In the thirty fathom level east no alteration since last reported. In the twenty-five fathom level west the lode is about eighteen inches wide, composed of grey, mica, and copper ore—the latter almost one ton per fathom. The wings sinking in the bottom of the twenty-five fathom level east lode about two feet wide, composed of blue slate, quartz, mica, and copper ore—the latter about two tons per fathom. The pitches are looking favourable. The shaft sinking up in the eastern part of the mine is progressing favourably. Delves Kitchen—The shaft is sinking in favourable ground. J. H. MERRIMAN.

UNITED MINE MINING COMPANY.

Sept. 20.—William's Shaft—Lode four feet wide, one foot on the north part producing some good ore. Sixty Fathom Level—In the eastern end of this level the lode is three feet wide, one foot good ore; in the western end the lode is three and a half feet wide, producing some good ore, with a promising appearance. Fifty Fathom Level—in this end the lode is two and a half feet wide, eighteen inches good ore; the lode in the wings is 2 ft. 6 in. wide, one foot ore of fair quality. Eastern Shaft—Lode three feet wide, eighteen inches ore of good quality. Forty Fathom Level—Lode three and a half feet wide, producing some ore—a little improved than last week.

NICHOLAS LARSON.

TRIGOLIAN MINING COMPANY.

Sept. 19.—The company having been engaged during the past week in putting down the necessary pilrows, &c., in Baker's shaft, I am unable to report to you anything new respecting the lode in said shaft. The lode in the fifty fathom level east is at present producing but a small quantity of ore, but the ground is still favourable for driving; this level is extended about twenty-one fathoms east of Baker's shaft. We are at present unable to work the eastern pitches below the forty fathom level, by means of setting water, and we have not a wing to be sunk below this level by six mes, about forty fathoms to the east of the lode, to communicate to the fifty fathom level at as early a period as possible, to drain the said pitches, that they may be wrought at a much greater advantage. We have sampled to-day, at Wadebridge (computed), fifty-five tons of fair quality ore. J. NIBBIE.

TRIGOLIAN CONSOLIDATED MINING COMPANY.

Sept. 17.—The lode in Christie's pump-shaft, below the seventy, is still north of the shaft, and the ground favourable. In the seventy fathom level, west of ditto, commenced driving; lode two feet wide, with some ore—a kindly lode. The lode in the sixty fathom level, west of ditto, is eighteen inches wide, but little mineral. In the fifty fathom level, west of ditto, against Gordon's shaft in the country. In the forty fathom level, west of Gordon's, the lode is fifteen inches wide, not much ore. In Gordon's shaft, below the forty fathom level, sinking south of the lode in the country. Tribute pitches in this part of the mine generally have a favourable appearance. In the Good Fortune shaft, below the forty-four, the lode is twenty inches wide, worth £50. per fathom. In the forty-four fathom level, east of ditto, the lode is 3 ft. 8 in. wide, on the north part, worth £50. per fathom. In the forty-four fathom level, west of ditto, the lode is two feet wide, worth £50. per fathom. In the thirty-four fathom level, east of ditto, the lode is three feet wide, worth £50. per fathom. The adit, west of ditto, a kindly lode, three feet wide, but little mineral; the tribute pitches on this lode continue much the same. In the Maree shaft, crossing north, I think we are quite through the lode, which is poor. W. SINCOCK.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

Gold Report.—Returns from June 3d to June 29th (twenty-three days); 237 lbs. 3 oz. 6dwt.—Total, from the 1st of January to the 30th of June, 231 lbs. 2 oz. 17 dwt. 19 grs.

Rio July 15.—We have much pleasure to inclose you a dispatch received this morning from Mr. Crickett; and we also give you copy of what that gentleman addressed to us, which will inform you of the state of things in that quarter. We regret to hear that our letter of the 11th, 16th, and 21st ult. had been intercepted—originals we sent by post, but trust the duplicates we forwarded by the return troop will reach him.

July 20.—We hand you a duplicate gold report, commencing the 20th of June. NAYLOR, BROTHERS, & CO.

BRAZILIAN COMPANY.

Cata Branca, July 5.—The gold reports still continue badly low, and the difficulties (increasing every fathom we sink) which we have to contend with make the working of Cata Branca very heavy, and I confess I am most anxious to remedy this. To explain what I mean—the depth and size (but principally the latter, being now west from twenty-six to twenty-eight feet wide) making necessary enormous timber to secure the walls, render it absolutely necessary that an arch of ground should be left entirely through the whole length of the mine. This, the new engine-shaft (when it reaches the lode, and which it shall be sunk to directly we can get men), will afford us the means of doing; it will cut the lode fifty-four fathoms below deep adit. Our present bottoms are forty-two fathoms, leaving twelve fathoms; six will be ample for the arch, so that we have yet six fathoms to sink. Before the expiration of the time it will take to do that, the shaft will be, I hope, down, and the lode, cross-cut, &c., driven upon so as to form the new steps. Should it not be—and, consequently, only a limited amount of tonnage be broken in the mine—I have no reason to think that our gold reports will show a falling off, for, by the 1st of August, I anticipate commencing with our small ten-head stamp the lodes both from the Bahia and D'huana (old names), or No. 13, and both of which I am satisfied will give a far better return than Cata Branca, the extreme falling off in value of which, I will not conceal from you, has disappointed me very much. It looks as good as ever, and I have seen as rich stones on the spalling-floor lately as I have ever done—nevertheless, it is very clear that, however rich isolated patches may be, the large mass is poorer than it was. That Cata Branca will again make rich there is not the slightest reason to doubt, and the part west of cross-course we have yet to prove—not that under the most favourable circumstances I consider it will equal the various lodes here (St. Antonin), which, although comparatively small, I believe will be found as rich, if not richer—at all events, they may, from their less size, and greater facilities in other respects, be worked at a far less expense. I led you to hope I should, at this time, have been able to speak surely upon this point, but there is no calculation to be made in this country, for the native workmen, upon whom we are entirely dependent for bringing in timber, are not to be relied upon—indeed, under the circumstances of the times, this establishment has been singularly fortunate. I believe you have had no information respecting the No. 13 lode. About a fortnight before I went to Companha, having a while idle, I directed the water to be bailed out, so that it might be examined; this was all but done the day I left, and, on the bottoms being seen, not a very favourable report was made, but the samples taken on a subsequent examination showed well (list of these will be seen in present gold report), and Captains Treweek and Verrier (Captain Williams having a wounded hand prevented his going down) were as much pleased with its appearance as they were before disappointed. Lieut. Griffiths—the engine not being ready—taught it best, till he knew my views, to let the water rise, so that since my return, as it would have interfered with the main object of working it, I have restrained my curiosity, and not yet seen it. The stone out of me of the rich sample, I should (as the mining captain did at first) have pronounced worth nothing; it is simply a soft quartz, sick in gold, but utterly destitute of other mineral, save a little iron; it is a singular thing, that where the rich sample was taken it fathoms above the bottom, and is a line running the flat wall side of where the old adit is driven. They could not have seen it—however, a little white, and I shall be able to tell you more about it. W. CORNWALL.

Gold return for four weeks to 1st July, 57 lbs. 4oz. 10dwt. 12grs.—Ditto for the month of June, 61 lbs. 4oz. 2dwt. 8grs.

MINING NOTICES.

(Under this head we purpose inserting each paragraph as may appear in the provincial and other journals, bearing reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the cautious extraction of portions in silent instances, and the want of honesty in others, throwing a degree of responsibility on a journal in giving publicity to reports, which we cannot assess taking upon ourselves.)

IMPERIAL BRAZILIAN MINES.—A cheery vessel brings some interesting accounts of the late workings of the Imperial Brazilian Mines. For twenty days, the average success had been at the rate of 18 lbs. of gold per day. Several of the day's products of late exhibit the unusual, but gratifying, result of 25 lbs., 20 lbs., and 22 lbs. of gold per day. Whether, however, a vein has at length been discovered in new ground at the forty-first fathom, or whether it is a mere "rest" or branch of gold that has been met with, does not transpire. The ensuing arrival is, in consequence, looked for with much interest by the portion who have long had their capital locked up in the mines, and in a state of apathy and despondency. The returns, on the whole, of the last six months, indicate richness in the mine, the annual exceeding considerably 600 lbs. of gold. A decided return is to be expected, in furtherance of strict economy in the management of the affairs of the company, and a reduction of the duty from 35 to 10 per cent., very also points of importance in the history of the mine. It should be added, that it was at the forty-first fathom each large return was yielded some eight or ten years ago by the Gongo Soco. The Imperial Brazilian miners, mostly working at 21 ft. per share, are now held at 16 ft. 6d. per share.—Morning Post.

SCOTTISH UNITED MINING COMPANY.

Sept. 20.—William's Shaft—Lode four feet wide, one foot on the north part producing some good ore. Sixty Fathom Level—In the eastern end of this level the lode is three feet wide, one foot good ore; in the western end the lode is three and a half feet wide, producing some good ore, with a promising appearance. Fifty Fathom Level—in this end the lode is two and a half feet wide, eighteen inches good ore; the lode in the wings is 2 ft. 6 in. wide, one foot ore of fair quality. Eastern Shaft—Lode three feet wide, eighteen inches ore of good quality. Forty Fathom Level—Lode three and a half feet wide, producing some ore—a little improved than last week.

NICHOLAS LARSON.

print for forty years, with the privilege of renewing it at the expiration of that period for a further term of forty years. The mine, which is known by the name of Pont Pena, was worked from 1722 to 1754, when the political troubles of France caused it to be abandoned. During that period it produced an immense quantity of ore, which yielded about 80 per cent. of lead, and about 30 oz. of silver to the ton, and it was clearly ascertained that the vein which was being worked contained ore to the value of many millions of francs. But at that period the science of mining was but little known to the proprietors of the mine, nor had they the means which have since been discovered in the power of steam. Many thousand tons of blende were thrown aside as valueless, from which, by a modern process, a considerable quantity of zinc can be extracted, and which, from this cause, may be at once made to realize a large sum of money. Moreover, the slag, or residue of the ore, is found, from the imperfect manner in which it had been worked, to contain a considerable quantity of lead, which may be easily and profitably extracted. But although the ore was turned to no immediate account, the excavations appear to have been carried on in so able and substantial a manner, that the timber-work employed therein is in as good a state as when it was first made; and it is found that nothing is required to bring the mine into profitable working order but to pump out the water which has accumulated. This, it is considered, may easily be done by steam-engines, in the place of the imperfect hydraulic machinery previously used for that purpose. The mine is situated on the banks of a river which communicates with the ports of St. Malo and Redon, by which it possesses the easy means of procuring fuel, and of transporting its produce. We have been induced to give this statement, because we understand that some of our island capitalists are about to embark with Mr. Hunt in this undertaking. It is stated that there are only two other silver-lead mines in France of any consequence—viz., those of Villevie and Poulinne, neither of which is comparable in riches with that of Pont Pena.—*Guernsey Star*.

BRANCEPETH COLLIERY.—On Saturday last the Brancepeth Colliery Company, Messrs. Lowe, Straker, R. Thwaites, and Pearson, succeeded in "winning" a very promising seam of coal in Brancepeth Park. The seam is about four feet clear coal, and it has been pronounced by several experienced viewers to be of a quality equal to that of the best Wall's End shipped from this county. This is important, not merely as regards personal or local interests, but as it relates to the country at large. It has long been a favorite theory that the coals west of Durham were of an inferior quality, and hardly fit to be shipped for the London market. This sinking, however, fully shows that the West country coals are equal to those produced nearer to the sea; and when we take into consideration the facility of winning, the greater distance of conveyance is fully compensated for, and we confidently predict that the western coal-field will yet meet with proper attention, and afford to the enterprising speculators a profitable return.—*Durham Advertiser*.

MINE ACCIDENTS.

Diastroph Accident in a Coal pit of Timbavury.—On Saturday last, whilst four masons were at work walling the sides of a coal-pit at Timbavury, belonging to Messrs. Palmer, Paris, and Co., the engineer let down what are termed the "hedges," full of coal. Seeing themselves in imminent danger from the approach of one of these hedges, they called out to the man to stop it; but from some cause hitherto unexplained he took no notice of it, and let down the hedge with the usual velocity. The fearful consequence was that the four men were killed on the spot by the tremendous contact of the heavy vehicle with their bodies.

Saltoun Coal-pit, near Whitehaven.—On Tuesday week an accident occurred in this pit, the property of the Earl of Londesdale, by which a blaster, named T. Farrell, nearly lost his life. It appears that Farrell and his brother were working together, and having completed a bore they put in the powder, and prepared the blast in the usual manner; unfortunately, however, the match was applied to the train too soon, and the explosion took place before they had time to get beyond the reach of danger. The consequence was that Farrell was most seriously injured by the shattered mass, some heavy pieces of rock striking him with great force, and bruising him in the most frightful manner. He was taken to the infirmary, where he still lies in a very dangerous state.

Spenn's-green Colliery.—As Mr. Coulson was at his work in this colliery, on the 31st ult., he went to the bottom of the shaft, where he gave the usual signal to be drawn up; he did not, however, get into the cage before giving the signal, which he ought to have done, and, consequently, the cage began to ascend before he had got both his legs into it, and the engine could not be stopped before it had ascended ten fathoms of the shaft. One of his legs was jammed between the sides and the cage, and was so much injured that amputation was deemed necessary. The poor man died a short time after.

Noltoun, near Hawickford.—A melancholy accident happened on Thursday week at Messrs. Bowen and Whitting's colliery, where one of the colliers, named Warlow, had the charge of a train of gunpowder (powder necessary for the purpose of blowing up a large rock near which he was standing, and the train was set fire to sooner than was expected), when the explosion so dreadfully injured him that he expired almost immediately.

Elder Vale.—A melancholy accident, attended with loss of life, occurred on the 1st inst., in one of the mine levels at Elbow Vale, by the sudden fall of an enormous mass of earth, whereby a poor miner, named Ross Phillips, was killed on the spot.—An accident also happened, on the following Tuesday, to the son of Isaac Ross, miner, who, unawares to the danger, was endeavouring to ride on one of the Trevil limestone trams, fell between the wheels of the tram, where his body became frightfully mangled, and died on the spot.

Nantyglo.—On Monday last, at a young man, named Jones, a haulier in a mine level, was at his

